

THE INDUSTRIALIST.

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THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13—1.13
Teachers.....	1.13—1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.18
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Kansas in 1876.

The Atchison *Champion* has made a careful review of the report of the Commissioner of Agriculture for 1876, contrasting Kansas with the other States, by crops. Our columns are too short for the whole article and we extract as follows:

We have been especially interested in examining the report of the statistician of the Department, Hon. J. R. Dodge, one of the most industrious, capable and pains-taking officers connected with the government. It embraces 197 pages, and is crowded full of valuable facts and figures showing the development of our agricultural industries.

THE CORN CROP.

Mr. Dodge places the corn crop of 1876 at 1,283,827,500 bushels, which is about 37,000,000 bushels less than the great crop of 1875, the largest ever produced in the United States. The average yield per acre is 25 bushels, which is about 4 bushels less than in 1875. The acreage in corn in the several States was 49,033,364 acres, and the value of the corn crop is estimated at \$475,491,210. "Corn is King," as the statistics presented show that the corn crop exceeds, in acreage, product and value, any other crop. It exceeds the wheat crop in value over \$175,000,000, and the cotton crop over \$246,000,000. The corn crop ranks first in value, then comes hay, then wheat, and then cotton. Old "King Cotton," deposed, takes the fourth rank among the agricultural products of this country.

Illinois is the leading corn producing State. Kansas ranks sixth. The product, acreage and value of the corn crop in the ten leading corn producing States, is as follows:

States.	Bushels.	Acres.	Value.
Illinois.....	223,000,000	8,920,000	69,130,000
Iowa.....	142,500,000	4,750,000	35,625,000
Ohio.....	115,000,000	3,133,514	45,700,000
Missouri.....	102,500,000	3,687,050	28,700,000
Indiana.....	99,000,000	3,800,000	33,660,000
Kansas.....	82,886,000	1,904,278	19,880,640
Kentucky.....	63,300,000	1,889,558	18,990,000
Tennessee.....	54,500,000	2,224,489	17,440,000
Texas.....	48,000,000	1,920,000	24,000,000
Pennsylvania.....	42,250,000	1,207,142	23,287,500

In the average yield of corn per acre, Kansas leads every State in the Union. The yield per acre in Kansas is given at 43.5 bushels. New Hampshire ranks next, her average yield being 42; then follows Vermont, 39; Ohio, 36.7; New Jersey, 36; Massachusetts, Rhode Island, and Pennsylvania, each 35; Wisconsin, 34; Kentucky, 33.5; California, 33; Connecticut, 32.5; Maine, 31; New York, Delaware, Indiana, Iowa, Nebraska, and Oregon, each 30; Maryland and Michigan, each 29; West Virginia, 28.2; Nevada, 28; Missouri, 27.8; Minnesota, 25.4; Texas and Illinois, each 25; Tennessee, 24.5; and Arkansas, 24.

WHEAT.

The wheat crop of 1876 aggregates 289,356,500 bushels, which is about the same amount produced in 1875. The acreage in wheat is 27,627,021, which is over a million acres in excess of the acreage of the previous year. The yield averages 10.4 bushels, and in 1875 it was 11.7—both being below a medium yield. The average price of wheat was three cents per bushel higher in 1876 than during the previous year. The total value of the wheat crop for 1876 is placed at \$300,259,800.

California is the leading wheat producing State, her crop of this cereal for 1876 aggregating 30,000,000 bushels. Kansas ranks eighth, her crop aggregating 16,510,000 bushels. The product, acreage and value of the wheat crop in the ten leading wheat producing States was as follows:

States.	Bushels.	Acres.	Value.
California.....	30,000,000	2,307,692	34,200,000
Illinois.....	23,440,900	2,520,430	21,799,200
Ohio.....	21,750,000	1,848,220	24,795,000
Indiana.....	20,000,000	1,818,181	20,400,000
Pennsylvania.....	18,740,000	1,419,696	23,425,000
Iowa.....	17,600,000	2,885,245	15,840,000
Wisconsin.....	16,800,000	1,866,666	16,968,000
Kansas.....	16,510,000	1,130,821	14,198,600
Minnesota.....	16,000,000	1,882,352	14,400,000
Missouri.....	15,240,000	1,229,032	13,563,600

In the average yield of wheat per acre, Kansas ranks eighth, but her average yield exceeds that of every one of the great wheat producing States included in the above table. The yield per acre in the different States is given as follows: Nevada, 18.2; Massachusetts, 18; Oregon, 17; Delaware, 16; New Hampshire, 14.7; Kansas, 14.6; Connecticut, 14.5; Pennsylvania, 13.2; New Jersey, 13.6; Texas and California, each 13; Missouri, 12.4;

Maryland, 12.5; Maine and Michigan, each 12; Nebraska, 11.5; Ohio, 11.8; West Virginia and Indiana, each 11; Kentucky, 10; Illinois, 9.3; Wisconsin, 9; Arkansas, 8.2; Tennessee, 8.3; Minnesota, 8.5; South Carolina, 8; North Carolina, 7.3; Mississippi, 7.7; Alabama, 6.5; Iowa, 6.1; Georgia, 6.

It will be seen by these figures that the average yield in Kansas far exceeds that of any of the leading wheat producing States. GRAND TOTAL.

The report from which we quote gives the area planted, in the nine crops enumerated above, in Kansas, as 4,452,627 acres, and the cash value of the crops produced as a total of \$46,210,320. Kansas ranks eleventh in the total aggregate value and ninth in the total aggregate acreage of her aggregate corn, wheat, rye, oats, barley, buckwheat, potatoes, tobacco and hay crops, as the following table will show:

States.	Acres.	Value.
Illinois.....	16,778,270	\$135,918,850
New York.....	8,848,130	135,625,200
Pennsylvania.....	6,000,509	104,924,600
Ohio.....	7,795,453	101,040,800
Iowa.....	10,208,723	74,600,200
Indiana.....	6,789,154	72,184,500
California.....	3,626,229	59,129,600
Missouri.....	6,324,067	58,074,950
Michigan.....	3,621,056	52,376,120
Wisconsin.....	4,738,087	51,745,700
Kansas.....	4,452,627	46,210,320
Kentucky.....	3,645,252	44,488,750
Tennessee.....	4,125,799	35,915,110
Texas.....	2,473,014	32,669,580

All other States report a less acreage and valuation than Texas, and we need not produce the figures.

THE POSITION OF KANSAS.

It will thus be seen that Kansas ranks as the sixth corn producing State in the Union, in the total of her corn product, and as the first corn producing State in the Union in her average yield per acre.

Kansas ranks as the eighth wheat producing State in the amount of this crop, and as the eighth in her average yield of wheat per acre.

Kansas ranks as the ninth oats producing State, in the total of her crop, and as the fifth in her average yield of oats per acre.

Kansas ranks as the fifth barley producing State, in the total of her crop, and as the eighth in her aggregate yield of barley per acre.

Kansas ranks as the tenth potato growing State, in the total of her crop, and as the fourth in her average yield per acre.

Kansas ranks as the twelfth hay producing State, in the total of her crop; as the tenth buckwheat producing State; and as the seventh tobacco producing State.

Kansas ranks ninth among the States of the Union in her aggregate acreage planted in these nine crops, and eleventh in the aggregate value of her productions for 1876.

LIVE STOCK.

The report credits Kansas with 234,100 head of horses, only fourteen States having a greater number; with 26,200 mules, only sixteen States having more; with 273,400 milch cows, only eleven States having more; with 525,000 other cattle, only nine States having more; with 142,400 sheep, twenty-seven States having a larger number; and with 359,800 head of hogs, nineteen States having a greater number. The total value of the horses in Kansas is put down at \$11,777,571; of mules, \$1,713,742; of milch cows, \$6,359,284; of other cattle, \$8,972,250;

of sheep, \$343,184; and of hogs, \$2,849,616—making, as the total valuation of live stock, an aggregate of \$32,015,677.

Adding the value of the nine crops mentioned in the report to the value of the live stock in Kansas, makes a total of \$78,225,997. And this does not include the crops of flax, hemp, broom-corn, sorghum and castor beans, or the fruit crops of the State, which together would swell the total to over a hundred million dollars. In other words, the crops of Kansas for a single year are valued, by the National Board of Agriculture, at nearly seventy million dollars, and the live stock of the State at over thirty million more.

Is not this a good showing for a young State of not much over 600,000 inhabitants? The *Champion* said, not long ago, that Kansas was the most substantially prosperous State in the Union, and do not the facts and figures here collected abundantly establish the truth of this assertion?

Remember the disparity of years and population between Kansas and such States as New York, Pennsylvania, Ohio, Illinois, Indiana, Iowa, Wisconsin, Missouri, California, Kentucky, Tennessee and Texas. In 1870 Kansas had a population of only 379,497; New York had 4,370,846; Pennsylvania, 3,511,543; Ohio, 2,655,302; Illinois, 2,520,410; Indiana, 1,655,675; Iowa, 1,181,359; Wisconsin, 1,055,501; Missouri, 1,6

THE INDUSTRIALIST.

SATURDAY, NOVEMBER 17, 1877.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

We are much obliged to Senator Plumb for a copy of the report of the monetary commission, an exceedingly valuable document to all interested in the currency question.

AND this time it is Mr. B. J. F. Hanna, of the Salina *Herald*, in whose good fortune many friends rejoice. He has been appointed Register of the U. S. Land Office at Larned.

THE valuable government map presented to the College by Hon. D. C. Haskell has been mounted and hung. It is the best thing of the sort ever made, and Mr. Haskell will accept full thanks and congratulations upon his recovery.

MR. FRANK DRUMMOND, Topeka, will please accept thanks for a copy of a charming song, with piano and flute accompaniment, entitled "Our Old Brown Homestead," and published by Geo. W. Martin. The music is composed by Prof. J. S. Slie, of Topeka, and is exquisite.

THE question that is agitating the minds of the citizens of Kansas City at present is whether they will organize a mob to hang the city council or the gas company? — *Topeka Blade*.

As a compromise, the propriety of hanging both parties may be worthy of consideration.

Press Changes.

Leavenworth county: We have received the third number of the *Central Record*, Rev. J. B. Hardwicke, editor, and S. P. Hardwicke, publisher, Leavenworth. It is a six-column folio, issued monthly, and devoted to the interests of the Baptist churches of Kansas. It should be taken by every Kansas friend of that important denomination.

Miami county: The *Western Spirit*, L. J. Perry, editor and publisher, has donned a patent outside and enlarged, stating as a reason that the change gives its readers more reading matter and reduces the expenses. The typography is up to the old mark.

IN a late speech delivered at the Frederick County Agricultural Fair, Maryland, President Hayes expressed a fundamental truth of political economy in the following words:

"The interest to be promoted by an institution like this, is the most important single interest in our country. If the farmer or planter is prosperous, it is almost certain that the country will be prosperous. Every other interest finds advantage in whatever promotes the agricultural interest; and if to-day we may with reason rejoice at the prospect of reviving prosperity in our country, it is very largely because the agriculture of the country is prosperous. Good crops and good prices for agricultural products make good times. [Applause.] All avenues of trade find their gains in the transportation of agricultural products. We come, then, to take part in your fair because it largely represents to the country the agricultural interests of your own county of Frederick, as well as that throughout the United States."

SOME time since, the manufacturers of the Bell telephone forwarded to Prof. Kedzie several instruments for trial, desiring his opinion thereupon. The matter having gotten into the papers with some inaccuracy, it may be well enough to say that he does not own any "agency" or "State right," such right being vested in the western agent of the Bell Telephone Company, Mr. James Hamblet, of St. Louis. Mr. Gardner Hubbard, of Boston, has since forwarded a num-

ber of large instruments to Prof. Kedzie, requesting him to use them in lecturing; and during the Christmas vacation he will deliver a lecture in the principal cities of Kansas giving a full explanation of the principles involved in the instrument, illustrations by large charts, and practical experiments with the telephone. He has engaged Mr. W. C. Stewart to act as his assistant in the operation of the telephone at the distant station during the lecture.

ONE of the stock phrases always handy when any body wishes to abuse Kansas, is that which designates it the "rotten commonwealth." In political contests the phrase is regarded as a very large-sized shovelful of dirt, and the oftener it can be wielded the greater is the amount of muck that is supposed to be thrown. No one man is Kansas, and no thousand men are this commonwealth. Some man and some parties of men may be rotten, but their rottenness is their own not the State's. The most cold-blooded as well as the highest possible authority on such a question is Wall Street; and when it pays eleven per cent premium for the State's "promise to pay," that act is the strongest decision which can be passed upon the integrity and ability of the commonwealth. Were the latter "rotten," Wall Street would not touch its bonds at any price. It is quite possible also that Wall Street would not give eleven cents, much less eleven per cent premium, for the notes of the individuals who are loudest and glibbest in howling about the "rotten commonwealth." Give us a rest.

Chip In.

The Junction *Union* states that an effort is being made to purchase a small property near Topeka as a home for Rev. Dr. Martindale, lately State agent for the American Bible Society, and also to provide a fund for his support. The circumstances of this case are peculiar, and are such as will appeal strongly to generous hearts whenever known. For twenty-five years Dr. Martindale has been engaged in the service of the Bible Society as one of its most efficient and honored officers. His personal character is as pure as his hairs are gray, and his ministerial record as spotless as a gentle heart and devoted spirit can make one. About a year ago he became totally blind, and was forced to step at once from an active and useful life into helplessness, with a family dependent upon him. We have known him for years as one of the most vigorous and pure-minded workers in Kansas, and personally vouch both for him and the above facts.

Old Ohio friends propose to purchase the property, and his many Kansas friends will gladly avail themselves of the opportunity to express practical sympathy with their gentle and venerable brother in distress by adding to the fund for his maintenance. No case has ever touched us as deeply as this one; and while we have a sinewy faith in the grace of God, we believe also in the muscular generosity of men. As this number of the *INDUSTRIALIST* goes to many a clerical and personal friend of Dr. Martindale, we depart from the usual custom of this paper respecting such topics, and take this method of notifying them of the movement on foot. Communications can be addressed to Rev. Dr. J. J. Thompson, agent American Bible Society, Topeka.

Wheat Prospects.

A finer wheat season has never struck any State than that now enjoyed by Kansas. Not only is the crop in an unusually advanced condition, but it goes into winter

quarters with such a large amount of moisture stored away in the soil, for spring use, that the brightest hope for a splendid average yield seems to rest on the best foundation.

The Atchison *Champion* estimates that the present acreage of fall wheat is twenty-five per cent greater than that of one year ago. From a careful reading of three-fourths of the papers published in Kansas coming from almost every county, as well as from other sources, we are inclined to the opinion that the above estimate will prove to be under rather than over the mark.

After making due allowance for the check given by the partial failure of the last harvest, and for the amount of hope sometimes found in estimates, it is by no means improbable that the momentum of the State towards fall wheat, the large amount of land broken this summer, and the faith of farmers based upon experience in the general certainty of this crop, will cause Secretary Gray's statistics, when collected, to show an increased acreage of thirty-three per cent. Be that as it may, Kansas has the best of reasons for expecting to harvest \$15,000,000 or \$20,000,000 from the wheat now tinting its sections as charmingly as the spring flowers beautify its prairies.

Since the above was in type, the *Kansas Farmer* brings an abstract of a forthcoming report of the State Board of Agriculture. Mr. Gray's statistics show the increased acreage of winter wheat over last year to be forty-five per cent, or 386,396 acres. The total acreage of the present crop is 1,243,515.

Industrial Art Education. No. 3.

Among all the European countries, England ranks highest for well-organized efforts in art education reaching all classes. These noble efforts are of a late origin, and enough time has not yet elapsed to show the abundant harvest that the coming quarter of a century will witness. England is not covered with relics of classic art like Greece; its population is not sentimental like that of Italy; its landscapes are not grand and charming as those of Switzerland; — factors that are highly stimulating in those countries; but the same sturdy courage that turned the rough iron and coal hills into gold mines is to-day creating there a new era in industrial art.

This system of education originated in the desire of the merchants and statesmen of England to lift the production of objects of art from its condition of inferiority to that of France and Germany. Not until the great exposition of 1851 did England fully realize the superiority of these nations; but she was quick enough to perceive it then and profit by the examples of her neighbors. As soon as she discovered her shortcomings, she went to work with great earnestness. Parliament set its powerful machinery in operation. A separate bureau of government devoted to art and technical education was organized, and inquiries were made at the great centers of manufacture, Birmingham, Liverpool, the Staffordshire potteries, etc., as to wants and needs. Mechanics were sent at the expense of the State to visit the factories, industrial exhibitions, and drawing schools of the continent, and their reports printed and distributed broadcast.

Powerful associations were formed for the development of the arts; and schools of design, libraries and museums were multiplied in every direction. The most effective means of instruction, however, were those connected with the South Kensington Museum and the public schools.

The Kensington Institute is a national

school for the training of "art masters" and "art mistresses." The courses of instruction pursued have for their object the systematic training of teachers in the practice of art as well as in the knowledge of its scientific principles, with the view of qualifying them to impart to others a careful art education; and to develop its application to the common uses of life and its relation to the requirements of trade and manufacture. Special courses are arranged in order to qualify school-masters of parochial schools to teach elementary drawing as a part of general education, concurrently with writing. The instructions are based on a mathematical foundation, and are systematic in every direction. No student can enter for a shorter time than half a year. With the art school is connected the great museum, a collection of rare treasures in classic and modern, fine and applied art. It is in its sphere undoubtedly the richest museum in the world.

The next step, after having provided for the education of art masters, was to introduce drawing, the study of the principles of ornamentation, and history of art into the colleges and teachers' seminaries of the country, and finally, by way of elementary drawing, into the public schools. In 1874 over 300,000 pupils received systematic instruction in England against 29,000 in 1855.

Until within a few years, the superiority of France in its art productions was not doubted or contested, but what wonder that the English have already equalled the French in most departments of their favorite field of industrial art development. And the real beauty of this grand bread and butter problem is finally its aesthetic side. Who will estimate the improvement in social life through those agencies? — J. D. Walters.

Thanksgiving Proclamation.

No State in the Union has greater reason for profound and grateful recognition of the Divine care and beneficence, both in connection with its past history and its present condition, than has Kansas.

Unbroken peace, and the maintenance of law throughout the State; general health among the people; abundant harvests rewarding the labor of the husbandman; prosperity in the various departments of business; steady growth in population, and increase in material wealth; flourishing schools and churches, securing intellectual and moral culture of the rich and poor alike; — these afford, at this time, sufficient reasons for intelligent and hearty thanksgiving to the Merciful Bestower of all good.

Our progress, through extraordinary trials and perils, to the position of assured strength and influence which we now hold, is the result of the Divine blessing signally granted to us in former years. This State, like our country at large, is to-day the monument of a wisdom deeper than any human wisdom, and of a purpose higher than any human purpose. In the contests and achievements in reserve for us in the future, we shall still need the unerring guidance of Him who has thus far shaped our affairs for the welfare of all classes of our citizens, including the humblest and the weakest, and in the interest of our priceless inheritance of civil and religious liberty.

Therefore, I, George T. Anthony, Governor of the State of Kansas, do hereby appoint

THURSDAY, THE 29TH DAY OF NOVEMBER, as a day of Prayer and Thanksgiving; and recommend that the citizens of this State, in their homes, and assembled in their accustomed places of worship, do on that day give sincere praise and thanks to Almighty God for all his goodness, and earnestly seek a continuance of His mercy toward us.

In testimony whereof, I have hereunto set my hand, and caused to be [L. S.] affixed the Great Seal of the State of Kansas.

Done at Topeka, this tenth day of November, in the year of our Lord one thousand eight hundred and seventy-seven.

GEO. T. ANTHONY.

By the Governor:

THOS. H. CAVANAUGH, Sec'y of State.

THE INDUSTRIALIST.

SATURDAY, NOVEMBER 17, 1877.

Five new students have arrived this week from distant counties.

After you have read this paper, hand it to some other sensible person.

The grading of the barn-yard is finished, and cost setting is now the order of the day.

We will send the INDUSTRIALIST for one month without charge to any person desiring sample copies.

We have enjoyed calls this week from the following prominent ministers who will be always welcome: Dr. J. J. Thompson, of Topeka; Dr. Timothy Hill, of Kansas City; and Rev. Mr. Reddeck, of Solomon City.

Rev. Dr. J. J. Thompson, State agent of the American Bible Society, delivered a strong and comprehensive sermon in the Methodist Church last Sunday evening. He is the right man in the right place, and an able successor of his able predecessor.

At the Webster debate last Saturday evening, it was decided that men of thought have done more for the good of mankind than men of action. Mr. Scott was elected a member of the Society, and initiated. During extemporaneous speaking, the propriety of issuing licenses to dram shops was pretty thoroughly discussed; and the use of tobacco was also considered at some length. Mr. Eckman declaimed, Mr. Bell read an essay, and Mr. A. F. Dickson read a selection.

The question: "Resolved, That novels are productive of more harm than good," will be discussed at the next meeting by Messrs. Scott, Eckman and J. B. Dickson on the affirmative, and Messrs. Anderson, Cox and A. F. Dickson on the negative.

REPORTER.

Friday, the 9th inst., the Alpha Beta Literary Society convened as customary. Miss Kinsey, Miss Parish and Mr. C. O. Smith were initiated. The name of Miss Mattie Mails was proposed for membership. Amos E. Wilson and Miss Emma Cook were duly installed as President and Secretary for the ensuing term. Valedictory and inaugural were then called for. Mr. Wilson's inaugural was heartily received by the members, and gave good evidence that he will promote the best interests of the Society. Delicacy prevents us from speaking of the valedictory. The question, "Is a man justifiable in disobeying the laws of his country which he believes to be morally wrong?" was thoroughly discussed, and decided in the negative. The mode of extemporaneous speaking was changed. Instead of passing the subjects around and allowing the members to speak without going forward, they are placed on the President's desk, and each one goes forward, draws his subject, and immediately presents his thoughts.

ENTERPRISE ITEMS.

Quite a number of strangers are in town looking for locations.

No one has donated us a Thanksgiving turkey as yet. Remember the poor.

There hasn't been a single inquiry after the health of our wife and baby since election. Strange, isn't it?

Profs. Kedzie and Stewart have a telephone with which they propose to give public exhibitions at an early day.

Hon. Welcome Wells has about 3,000 bushels of apples stored in the cellar under Fox's book store, and he is not through picking yet.

The city is going to build a pound down near the depot. Marshal Parkinson informs us that the reason the cattle have not been taken up lately is that there is no place to put them. As soon as the pound is finished they will be taken care of.

NATIONALIST ITEMS.

W. H. Sternberg, of Buffalo Station, is making his friends glad by a visit this week.

Nine car loads of freight—grain, lime and brick—were shipped from this station on last Saturday.

Two hundred and forty-three cars of cattle passed over the K. P. road to Kansas City on the 25th of last month.

Returning to Manhattan after an absence of a month, we have met a surprising number of strange faces (good looking ones, too,) in town.

The great amount of rainy weather has seriously delayed corn gathering, and there is danger that much of it will be caught by the snow. Monday and Tuesday were clear days, but it rained again Tuesday night. The grumbler's dirge now is that it rains too much in Kansas.

A considerable quantity of Manhattan stone has been shipped both east and west, but not one-tenth part as much as will be in the future if our people put forth the proper efforts. It ought to be more generally advertised, and a larger quantity of cut and dimension stone should be kept on hand ready for shipment at a moment's notice. We are confident that a regular stone yard would pay.

The Abilene Chronicle has the following to say of our old townsmen, George C. Kenyon:

"We would recommend Mr. Kenyon to our people as a most excellent business man, and one in whose statements they can place absolute reliance. He is in every sense a most honorable business man, and we take great pleasure in speaking a good word for him."

While traveling in northern Kansas last month, we noticed a large number of wind-mills in operation. They are becoming quite common on farms up there, and we trust that they will soon be in this section also. It is undoubtedly a great help to be able to have running water in your house, barns, corrals, gardens, etc., whenever you want it. There ought to be at least one hundred erected in Riley county within a year.

The curse of most Kansas towns is that so much of the land in their vicinity is owned by men who will not improve it. We are more favored in this respect than many others, but, nevertheless, there is a great deal of uncultivated land hereabouts that should be put under the plow. In some cases it belongs to our own people, and it seems strange that they allow it to remain unproductive so long. It is to be hoped that every one who can will bring his waste land under cultivation next year.

A ride through the College farm this week showed us many improvements of late, and one of the neatest and most thrifty looking farms in the country. A handsome grove of maples has been left on the north side of the hedge, and through the grove a stone sidewalk has been laid—a continuation of that excellent stone walk from the park and from town. The walk was a necessity, and it cost no more to lay it in a delightful place than it would have to put it on the barren roadside. Beside the neat and enterprising look on the outside of the College buildings, Dame Rumor says that excellent mental work is being done inside the laboratory, the barn, work-shop and horticultural building.

If anybody will furnish the turkey, we'll skirmish around and find the stuffing.—*Peabody Gazette*.

PRESS NOTICES.

The handsomest paper published in Kansas is the Manhattan INDUSTRIALIST. It is a perfect little gem in the way of printing.—*Lincoln Center Register*.

Commencing last week we present our readers with the advertisement of the Kansas State Agricultural College, located at Manhattan. It is the best institution in the State for those who desire a good, practical education with little means, as students can almost, if not entirely, meet all expenses by working in the shops or on the farm.—*Cherokee Banner*.

The INDUSTRIALIST, the spicy advocate of the State Agricultural College, has enlarged to four columns to the page, and boasts an edition of 1,300 copies. It is for the money the best agricultural and farm paper in the State, and an able advocate of one of the best schools in the New West. Kansas may be proud of the INDUSTRIALIST as one of "our things."—*Alma Blad*.

The INDUSTRIALIST, published by the officers of the Agricultural College, comes to us enlarged. Glad to know the sterling little sheet, always chock full of excellent matter, is appreciated as it deserves to be. Parties who want to inform themselves upon the Agricultural College of Kansas, should send for a copy to President Anderson, Manhattan, Kansas.—*Kansas Farmer*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the institution, until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the

literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution sends labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

AMOS E. WILSON, President.

MISS EMMA COOK, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

IRVING TODD, President.

A. N. GODFREY, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 11:15 A. M.

Going West..... 5:05 P. M.

FREIGHT ARRIVES.

Going East..... 5:05 P. M., and 3:50 A. M.

Going West..... 6:30 A. M., and 8:05 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 10 A. M.; Mrs. A. D. Goodwin, Sup't.

CONGREGATIONAL.—Rev. R. D. Parker, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. J. E. Platt, Superintendent.

EPISCOPAL.—Rev. J. H. Lee, Pastor. Service at 11 A. M. every Sabbath. Sabbath School immediately after service; Rev. J. H. Lee, Sup't.

FIRST METHODIST.—Rev. R. Wake, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; L. R. Elliott, Superintendent.

SECOND METHODIST (colored).—Rev. J. S. Grifing, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 3 P. M.

PRESCYTERIAN.—Rev. Wm. Campbell, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Rev. Wm. Campbell, Sup't.

MANHATTAN NEWSPAPERS.

THE ENTERPRISE.—A. L. Runyan, Editor and Proprietor. Published every Wednesday. Send for sample copy.

THE NATIONALIST.—Albert Griffin, Editor and Proprietor. Published every Friday. Send for sample copy.

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

Bookseller and Stationer.—S. M. Fox dealer in Fine Stationery, Pocket-Books, Envelopes, Gold Pens, Blank Books, etc. No. 127 Poynz Avenue, Manhattan. 19-3m

Clothier.—Wm. Knostman, dealer in Ready Made Clothing, Hats, Caps, and Gents' Furnishing Goods. A well selected summer stock on hand. Opposite post-office, Manhattan. 11-26

School District Bonds.—School District Boards about to issue bonds are invited to correspond with us before negotiating elsewhere, as we always pay the highest market price. Send to us for blank bonds, which are furnished free of charge. Address E. Gale, Loan Commissioner, Manhattan, Kansas. 19-1f

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange is sued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

The Farm Department offers for sale YOUNG SHORT-HORN BULLS of the highest breeding, together with JERSEYS and GALLOWAYS. Also, a very fine lot of BERKSHIRE PIGS, eligible to record and the get of the celebrated boars Lord Liverpool and British Sovereign II. We have also for sale a few choice ESSEX PIGS, straight Jos. Harris stock, of both sexes. Our prices place this stock within reach of the general farmer. Address EDWARD M. SHELTON, Sup't Farm, Manhattan, (11-1f)

Agricultural College Lands.—These lands are in the market, as provided by law, and for sale for one-eighth cash, balance in seven equal annual payments with ten per cent interest, payable annually. The lands are all choice selections, and prices range generally from \$5.00 to \$6.25 per acre. Some of the best tracts are appraised at from \$8 to \$10 per acre, and they are well worth the money. These lands are located in Washington, Marshall, Clay, Riley and Dickinson counties. For particulars, maps and descriptions, address L. R. Elliott, Agent, Manhattan, Kas.

The Kansas Publishing House.—A Kansas institution, Celebrated for Kansas productions. The only Kansas House to secure a Centennial award for quality of work. Kansas work, by Kansas mechanics, at this Kansas establishment. Pronounced "faultless."—Felter's series of School Records, made to comply with Kansas laws, by a Kansas author and Kansas publisher. The best School Officers' Records in the market.—Felter's Elements of Book-keeping. The first Kansas text-book by a Kansas author and a Kansas publisher. Being rapidly adopted by the schools.—The Annals of Kansas, a marvellous history of Kansas, written and printed in Kansas.—The Educational Calendar, a beautiful monthly publication for the Officers, Teachers and Patrons of Kansas schools, for twenty-five cents per annum.—The best Railroad, County, Bank and Mercantile Blank Book work to be had anywhere, all done by Kansas mechanics. Our ambition is to build

THE INDUSTRIALIST.

SATURDAY, NOVEMBER 17, 1877.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courier*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

When selecting a point at which to attend school, it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Is a credit to any State. Its facilities and course are sufficient for furnishing an education equal to any of the eastern States.—*Cherry Vale Leader*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Elsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wichita Beacon*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

Vocal Music.—Regular instruction and drill in the science and art of vocal music, without charge. Recitations in these classes are not reckoned as an "industrial."

Dress-Making and Millinery.—Daily instruction and drill in hand and machine sewing; cutting, fitting and making dresses; and all branches of millinery, by a practical teacher.

Gardening for Profit.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture.

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects injurious to the Kansas Farmer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

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Printing!—Daily instruction and drill in the work of a First-Class Printer. The Lit. Departments offer a thorough education in the instruction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

"It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact."

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas.

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KANSAS STATE AGRICULTURAL COLLEGE.

Board of Regents.

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Manhattan, Kansas.

THE INDUSTRIALIST.

VOL. III.

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THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.18—1.18
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Kansas Crops.

The following summary of the crops of Kansas, up to Nov. 1st, is taken from the Report of the State Board of Agriculture, and it is as reliable and as nearly correct as it is possible to make such statistics without an extra outlay of money. Nothing that the National Bureau of Agriculture has heretofore attempted in making agricultural statistics approaches in thoroughness or accuracy the reports of Kansas, under the auspices of the State Board of Agriculture:

WHEAT.

We have made an effort to procure correct average yields of the principal crops, six of which are grain, the rest will follow,—winter and spring wheat, rye, barley, corn and oats. We have asked this information for the months of July, August, September and October, from our regular correspondents, and, in addition thereto, we have scattered postal cards throughout the State to prominent farmers in the various counties. From all these returns we made an average for each county.

It will be observed that the winter wheat product for the State is 9,714,171 bushels, against 11,738,409 in 1876, a decrease of 2,024,237 bushels, while the average yield per acre is 11.33 bushels, against 15.47 in 1876.

The product of spring wheat this year is 3,518,386; last year, 2,881,817; an increase over last year of 636,569 bushels. Average yield in 1877, 17 bushels; in 1876, 10.89 bushels.

Winter and spring wheat products for 1877 aggregate 13,232,557; in 1876, 14,620,225, a decrease in one year of 1,387,669 bushels. The causes which have produced the decrease in winter wheat are exceptional. A portion of winter wheat area was destroyed by locusts in 1876. That which was re-sown uniformly yielded poorly. Then the excessive rainfall during the blossoming period, and subsequently up to and during harvest, have conspired to produce the results named. Spring wheat was remarkably good this year, especially in the north-western part of the State, and farmers are preparing to put in a very large area next spring. This is very questionable policy. The counties of Allen, Anderson, Woodson, Neosho, Bourbon, Miami and other counties in the south-eastern part of the State, have lost more from chinch-bugs than the whole State has from the devastation of locusts. Spring wheat has behaved splendidly this year in the west and northwest, the Odessa variety being the general favorite. It is a late variety and will induce the chinch-bug in dry seasons as sure as it is sown. Farmers are, therefore, assuming a fearful responsibility, and hazarding nearly all crops not only, but are assuming, because spring wheat has done remarkably well in 1877, it will continue to do so.

The following tabular statement for six years, from 1872 to 1877 inclusive, of winter and spring wheat, will show the progress in acreage and product each is making in the State:

WINTER WHEAT.

Year.	Acreage.	Product.
1872.....	247,685	2,173,695
1873.....	258,393	4,548,384
1874.....	438,179	6,870,606
1875.....	505,681	10,046,116
1876.....	758,600	11,738,409
1877.....	857,125	9,714,171

SPRING WHEAT.

1872.....	64,159	889,346
1873.....	145,241	1,445,660
1874.....	278,026	3,010,777
1875.....	237,523	3,163,287
1876.....	264,583	2,881,817
1877.....	206,868	3,518,386

The estimate acreage of winter wheat sown in the fall of 1877 is 1,243,515 acres; an increase over the acreage of 1876 of 386,390 acres, or 45 per cent. The condition of this extraordinary breadth is twenty-five per cent above a fair average. So favorable has been the fall of 1877 for wheat, and so rank has been the growth, that some farmers have had apprehensions that wheat would "joint," and thereby become injured. This is a widespread popular fallacy. All the pruning that frost can possibly do to a rank

overgrowth of fall wheat is beneficial than otherwise. Like applying the knife to the terminal branches of a vigorous tree, where one is removed others are induced to grow. Frost-pruning will increase the stalks from each stool, and the rank growth will fall down and act as mulch, and protect the plant from the severe dry winds of winter. Wheat had better be sown in July than October.

On the first of May, 1877, 1,541,447 bushels of wheat, the product of 1876, was yet on hand. This was largely held by farmers as security against any possible disaster to the crop of 1877, until the latter was assured. Farmers are in condition, therefore, to hold or sell, as they deem best.

RYE.

Kansas stands at the head of all the States in the production of rye. The acreage of the fall of 1877 is estimated by our correspondents to be 21,398 acres more than that of 1876, or 18 per cent.

The acreage of 1877 was 119,871 acres; the product, 2,508,830 bushels: average yield per acre, 20.91 bushels. The yield is greatly reduced, from the fact that our farmers generally sow rye for winter and early spring pasture. The extent to which it is grazed, of course, controls largely the yield per acre at harvest.

CORN.

Corn stands at the head of the list of Kansas crops in acreage, product and the extraordinary increase from year to year.

In 1873-4, there was a temporary check, owing to the misfortunes of those years; but with these exceptional years, the increase has been marvelous, as will be seen from the following table:

Year.	Acreage.	Product.
1872.....	1,173,562	46,667,451
1873.....	1,221,038	29,683,843
1874.....	1,525,421	15,699,078
1875.....	1,932,860	80,798,769
1876.....	1,884,454	85,308,176
1877.....	2,563,112	103,565,646

The average yield for the State is 40.40 bushels per acre. The average yield for last year was somewhat larger, owing to the copious rains in the early spring of 1877, which prevented the crop from being worked as much as it ought to have been. In many localities, entire fields were captured by armies of weeds.

The average yields in 1876, in the following Western States, were as follows, according to the National Bureau of Agriculture:

Kansas.....	43.5
Indiana.....	30
Illinois.....	25
Nebraska.....	30
Oregon.....	30
Wisconsin.....	34
Minnesota.....	25.4
Iowa.....	30
Missouri.....	27.8
California.....	33
Nevada.....	28

BARLEY.

The acreage of barley for 1877 was 79,704 acres; the product 1,800,083 bushels. While there has been a reasonable increase during the last six years, it has not proved as remunerative to farmers as most cereals. The average yield, however, is good, as compared with the rest of the Western States, but the quality does not rank as high. The average yield stands thus in the Western States, according to the National Board of Agriculture, giving Kansas the fourth place among the ten States named:

Oregon.....	29
Nevada.....	25.5
Iowa.....	24
Kansas.....	23.5
Wisconsin.....	22
Nebraska.....	22
California.....	22
Minnesota.....	21.9
Missouri.....	17
Indiana.....	15.2

The average yield for 1877 is 22.58 bushels per acre.

OATS.

The acreage of oats in 1877 was 310,226, a decrease since 1876 of 81,619 acres. Notwithstanding this, the increase in the product has been 334,976 bushels; the product aggregating 12,721,292. The average yield was 41 bushels per acre. The following

shows the progress in acreage and product of the cereal during the last six years:

Year.	Acreage.	Product.
1872.....	276,834	9,345,781
1873.....	272,908	9,005,964
1874.....	314,926	7,700,586
1875.....	289,437	9,794,051
1876.....	381,845	12,386,216
1877.....	310,226	22,721,292

The average yield per acre in the ten Western States named, in 1876, was as follows:

Indiana.....	22.7

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THE INDUSTRIALIST.

SATURDAY, NOVEMBER 24, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

Science for the Children.

In recent issues of the *Commonwealth*, "Giles" and "Paterfamilias" have been locking horns over the somewhat threadbare issue of the common school question; and dark hints have been liberally exchanged of dire vengeance in store for some one unless certain defects in our school system are speedily remedied. Now, however unsatisfactory the present curriculum of the average common school, it has always seemed to us entirely unjust to attempt to attach the blame to any one party, whether teachers, boards of directors, or the public. The evils have sprung of themselves from a system which handed down from one generation to another, we now find to be false in its tendencies, because it has in view only the preparation of the young pupil for a more elaborate training for professional life.

Thus, the great mass of these pupils who in Kansas, as everywhere else, are destined to serve their age and generation as industrialists, find themselves on leaving school somewhat meagerly equipped from an educational stand-point. To remedy this condition of affairs, the progressive educators of our country are urging the necessity of making the curriculum of the common school complete in itself, without reference to anything beyond. Hence, they demand as a part of this movement of reform a restriction of the time, now so lavishly bestowed upon the minutiae and details of a few studies, to their fundamental and essential principles only, and the extension of the course in another direction by the introduction of branches in natural and physical science, so fascinating to the minds of all children when properly presented. It is upon this last point that we wish to contribute a word additional. Every teacher must remember that if this movement is to be successful, instruction and experiment must go hand in hand. There is nothing in the educational universe quite so dry as a course in any physical science in which the text-book constitutes the sole piece of apparatus which the class sees from one end of the term to the other. Many a well-meaning teacher has committed a disastrous blunder in attempting to conduct such a course with a book utterly beyond the range of his pupils' abilities; disastrous because the prejudices of the child's mind once aroused by some such bitter experience, it is only with the greatest toil that they can be removed again. With such books and facilities as are now becoming available, no excuse of limited means either of teacher or patron is longer valid.

The little work on electricity just issued by Professor Tyndall, that on light, by Professor Mayer,—both intended for the needs of the children, and filled with experiments which the teacher and scholars can carry out among themselves,—are the latest arrivals, and just in the line. In another department, too, that of geology and mineralogy, a new opportunity is offered. An eastern dealer furnishes one hundred geological specimens, named and labeled, for one dollar! With such a miniature collection in hand, how much a class of bright, energetic boys and girls might learn and enjoy under any teacher in Kansas. This great movement of bringing science down to the comprehension of the little folks has only begun as yet. It will soon extend to every department of scientific study, and we must avail ourselves of these privileges as they come.—*Prof. Kedzie.*

Industrial Education Needed.

The Agricultural College was endowed for the special purpose of furnishing a practical education that will directly prepare students for the farm, or trades, or business in the same sense that West Point is designed to instruct cadets in the principles and practice of the art of war. Quite frequently the notion is held that only the professional classes need to be educated; and this notion finds a broad base in the fact that the educational system of the United States is now and always has been directly shaped for the benefit of the professional classes, although but three per cent of those having a vocation are professional men while the ninety-seven engage in industrial pursuits.

In considering this notion, it may help us to compare the need for an industrial education with the need for a military education. A man can serve as an officer without being able either to read or write, as was shown by the experience of the late war. But the same man would have served better, and would have risen more rapidly and higher, had he possessed the advantage which others derived from an ability to read and write. And this is equally true of the industrialist. Some successful farmers or mechanics in every State are unable to read; but would not the same man be more successful and better able to protect himself if he had this ability? Most certainly.

Again, the late war clearly proved that, while men could serve efficiently as officers who previous to enlistment had never seen a company drilled, still the same officer would have been greatly more efficient and intelligent had he received a military training. Probably there was not a single volunteer officer in either army who did not wish a thousand times for the knowledge taught at West Point, nor a single one who attained eminence except by the closest study of military art during his service.

In other words, there is always some one way which is the easiest and best way of doing a given thing. If other persons have discovered and tested this best way, their experience is greatly helpful to those who are called upon to do the same thing. This experience may be heard or it may be read. It is immaterial how the information be obtained, but necessary that it be obtained. Now, both in the art of war and the art of agriculture, there are a great many different things to be done, and several different ways of doing each of these things. But some of these ways are better than others; and if a pupil can be taught these best ways before he is called upon to do them as officer or farmer, it certainly will be far better for him and for the interests entrusted to him. It is precisely upon this fact that the relation of "apprentice" in former days, and of "pupil" or "chore boy" in these days, rests. That relation is as old as the race, and its continuous existence, in some form or other, is the best evidence of its necessity.

The questions which daily beset the farmer, mechanic, business man or woman are as perplexing as those which puzzle the lawyer. And the right solution of these questions is of as much importance to the former as to the latter. Furthermore, these problems have arisen before and have largely been settled by former generations, one way or another; so that their experience is not only valuable but obtainable. And it is simply a matter of common sense whether or not we avail ourselves of this experience in the industrial pursuits, as the physician does in his profession. The principles of science, in its several depart-

ments, which underlie the work of the business world, and the past experience of men in applying these principles to the demands of business life, are quite as well known and can be as successfully taught for the direct benefit of the industrialist, as the principles of science have heretofore been taught for the direct benefit of the professional classes. And if it pays the cadet or student of medicine to obtain an education for his work, precisely to the same extent will it pay the industrialist to obtain a practical education.

Not Too Far.

We heartily concur in the opinion expressed by the *Educational Calendar*, as quoted by the *Topeka Commonwealth* in an article printed on the first page. There is a demand for a more practical education in the public schools; and, in framing a course of study for these schools, "the question to be discussed is not whether knowledge has worth, but the relative worth of the different kinds of knowledge to the laboring classes."

No one will take the position that a given kind of knowledge is of equal value to all persons. For example, an accurate knowledge of the English language has a cash value to a printer, since his profits depend thereupon. That same accuracy of knowledge does not affect the profits of a sailor, and therefore has not the same value in his business. An exact knowledge of anatomy has a cash value to the surgeon, and, relatively, very little if any to an editor. Illustrations establishing this point might be furnished by the column were it necessary. The various departments of fact or theory, grouped under the general term "knowledge," are as diverse from each other, and as diverse in the effects which they produce, as are plows from spades or jack-planes from shooting-sticks. Hence, in framing a course of study to be followed in the public schools, the first question ought to be, For whose benefit shall this course be designed? and the second, What kinds of knowledge will have the greatest worth, and produce the best results in effecting the given object?

Now, the facts are that the Kansas course of study is simply a copy of that of older States, and that the course of the older States was expressly and avowedly designed to prepare pupils for the professions. The district schools and especially the high schools of the United States are, and were intended to be, grades preparatory to the universities, and their courses were built accordingly. This fact no one acquainted with the subject will dispute.

Another fact which no one will be inclined to dispute is that public schools, for the support of which compulsory taxes are collected, should be conducted for the greatest good of the greatest number. The only ground upon which the State can justly levy a tax is, that the interests of the people themselves demand that the rising generation shall receive such an education as will qualify them for discharging their duties as citizens, and for adding to the general wealth as producers. On the one hand, the republic can not afford to commit its future guidance to ignorance; on the other, it has no right to levy taxes for the education of drones, since, outside of his mere citizenship, it regards the citizen as a workman in a community of workers mutually dependent and mutually affected by the individual's prosperity.

We have no sympathy whatever with the cry that the professional classes are not "producers" but only "consumers." Because the skill of a physician in checking the disease that would otherwise be fatal is a

"production" of a "value" that is certainly equal to that of a crop from an acre of land—at least to the patient; and the work of the teacher in imparting knowledge and making more efficient that wonderful machine called the mind, is certainly as "productive" as is the labor of the wagon-maker or type-founder.

But we do claim that the idea of education by the State, in addition to embracing the purpose of qualifying the citizen for an intelligent exercise of the right of suffrage, must include, and does very largely include, the further purpose of qualifying him to become a producer—at least to the extent of supporting himself as distinct from the dependence of a pauper.

Either this latter proposition is incorrect or it is correct. If incorrect, then we make the point that since, upon this supposition, the State can only shape its educational course for the qualification of the pupil as a voter, it has no right to shape that course for the qualification of the pupil as a professional man, as distinct from his qualification as a voter, because the practice of a profession is one mode of making a living. In other words, if the farmer and mechanic are to be excluded upon this ground, then let the lawyer be also. But if, as we believe, the proposition is correct, and if the design of the educational system should be to qualify the pupil as both citizen and producer, then we make the point that the course of the public schools should be framed upon the scale that men engage in the different vocations, and that the studies forming the course should be proportioned and taught with respect to the relative value and effect of these kinds of knowledge in training men as producers in these vocations, so far as this can be consistently and equitably done.

The professions of law, medicine and theology have a fixed work; the fourth, that of the teacher, is not necessarily fixed, since it matters not whether he imparts knowledge as directly useful to the lawyer or to the farmer. And this distinction should be kept in view in a discussion of the State's relation to the public schools. A little more than one per cent of the citizens of Kansas who follow a vocation are engaged in teaching, and less than two per cent are in the other learned professions. And we claim that the shaping of the course of study in the district schools of Kansas for the direct benefit of the three professionals, instead of shaping it for the direct benefit of the ninety-seven industrialists, is neither just nor expedient. Such action does not tend to secure the greatest good to the greatest number. If eight be greater than seven, it somehow strikes us that the interests of ninety-seven are greater than the interests of three, whether viewed from the standpoint of educating the voter, or the producer, or both.

To go this far isn't going too far; and, in our judgment, not to go this far isn't going far enough. Education by the State is one thing, and wholly different from education by individuals or corporations. Upon the above principles the question whether what is vaguely known as the "higher education" should be taught in the public schools, will depend upon what that education is, and upon what it is worth to the citizen and producer. Unquestionably every pupil has a right to obtain all the knowledge he can, as every man has a right to obtain all the property he lawfully can, but it is getting to be a very restless question as to just how far the State is bound to go in furnishing an education. And, while we have no authority for saying so, we will risk the opinion that the *Commonwealth* concurs in the above. Don't you?

THE INDUSTRIALIST.

SATURDAY, NOVEMBER 24, 1877.

New students arriving.

Edition this week four thousand.

Any quantity of locals crowded over.

Prospects for next term unprecedented.

After you have read this paper, hand it to some other sensible person.

Go to press earlier than usual. Webster Society report will appear next week.

We will send the INDUSTRIALIST for one month without charge to any person desiring sample copies.

This and three more numbers of the INDUSTRIALIST will be sent to a good many persons without charge.

The summary of the crops of Kansas printed on the first page should have been credited to the *Kansas Farmer*.

The prayer-meeting last Friday evening was conducted by Prof. Platt, who read the twenty-sixth chapter of Acts, in which Paul rehearses the story of his conversion and makes his defense before King Agrippa. "Almost Persuaded" was the topic suggested for consideration. The students took part in the exercises with commendable promptness, and the meeting was a very profitable one. The subject for the next meeting is "How to become a Christian."

TO THE TEACHERS OF KANSAS.

This method is taken of announcing that I am now able to fulfill the offer made upon the publication of the little text-book upon Agricultural Geology, "to furnish wherever desired for purposes of instruction a complete set of the minerals and soils described in the book, charging only for the cost of collection." The cabinet prepared for this purpose embraces over sixty specimens, accompanied with printed labels and catalogue; the minerals arranged in pasteboard boxes, the soils sealed in bottles; and the whole packed in a locked case. A number of these cabinets have already been supplied to County Normal Institutes throughout the State. Arrangements have been made with the well-known mineralogist, Dr. A. E. Foote, of Philadelphia, to supply the minerals not obtainable in this State. As already stated, this cabinet is furnished at the simple cost of its collection, which will not exceed \$10 and will probably be less. This work is undertaken with the hope and design of encouraging studies in elementary science in the common and higher schools of Kansas.

WM. K. KEDZIE.

Friday, Nov. 16th, the Alpha Beta Literary Society met as usual in Prof. Platt's room. Misses Mails and Glossop were elected and initiated. Relative advantages and disadvantages of novel reading was then discussed and decided in favor of the advantages. The third number of the *Gleaner* was then presented by Mr. Geo. Gale and Miss Nena Wilson. The editorial informed us there was but little local matter in the columns of this issue, and we were fully convinced of the fact. One of the most interesting articles was entitled "Three-score years and ten to sweet sixteen," representing a letter written by the former to the latter. The Society was then favored with a quartette accompanied by the organ. Music committees were appointed, and hereafter the Society will be regularly supplied. Question for debate at next meeting, "Resolved, That suffrage should be restricted to those who can read and write." Speakers on the affirmative, C. O. Smith and George A. Gale; negative, C. J. Reed and W. H. Sikes. Appointments: Miss Mattie Mails, reading; Miss Emma Glossop, essay; Miss Dora Kinsey, declamation. An unusual number of visitors were present, especially Websters.

S. H. W.

PRODUCTIVE CONSUMPTION ON KANSAS FARMS.

A member of the class in Political Economy presented the following paper for class discussion:

Consumption is the destruction of value. Productive consumption is the consumption of value in such a manner that it reappears in the course of time, perhaps in another form, but in greater value. A farmer expends value in the shape of seed wheat, in the labor and machinery of planting, and the interest of the investment in land. All this value reappears at harvest in the shape of the wheat crop, which is generally sufficient to replace the value consumed and leave a small margin as profit. Consumption in agriculture is the principal consumption of the State, and hence is that of greatest interest. Every farmer possesses value in his land, his stock, his farm buildings, machines, implements, etc. These values are constantly being consumed, and must be replaced. The farmer has to deal with two forms of consumption,—that of capital and that of labor. Consumption of capital takes place when investments are made in any of the following modes:

First, in the seed and implements necessary to produce the desired crops. This is always productive consumption if the season be favorable and the crops well cultivated.

Second, in farm buildings which are really needed upon the farm for the storage of grain or the protection of stock. No investment can be more productive than this. A farmer wastes enough grain in two years by the use of tumble-down, leaky cribs to more than pay for the erection of a good, substantial granary. Good granaries are store-houses in which he may hold his grain for higher prices; whereas, that stored in rail cribs must be sold at any price or entirely lost. The erection of good barns and sheds for protecting stock, besides being a moral duty, is also an economical duty. A farmer who unnecessarily allows his stock to stand out in the storm, wet, shivering, and half frozen, is both unfeeling and exceedingly shiftless. How would a merchant prosper who allowed his goods to remain exposed to the weather? Every man is in duty bound to care for the stock in his possession, and administer to their wants to the best of his ability. In neglecting this duty, we disobey a moral law higher than any law of man.

Third, in the purchase of machinery. If machinery be needed in any given operation, it is to the best interest of the farmer to obtain it at once. The first cost of a necessary machine is soon replaced by the labor saved by its use. Improved machinery is especially valuable to the farmer of Kansas, enabling him to cultivate broader fields, and to cultivate them better, with a saving of labor and time.

Fourth, in improving the breed of farm stock. Stock of all kinds may be considered as machines which consume rye, corn, oats or grass; producing locomotive power in the case of horses, and beef, pork or wool from cattle, hogs or sheep. It is evident that as these machines are improved, the product will be equally improved in quantity and quality and thus command a much better price.

Fifth, for personal comfort and the gratification of taste. For this form of consumption we receive no tangible returns, and yet it is one of the most productive. A man's personal comfort and happiness are of great value to himself, and any expenditure which will innocently increase them, unless carried to excess, may be considered as productive consumption.

Farming may be made one of the happiest vocations of man, if happiness be one of the objects sought; but there is little enjoyment in toiling for money alone in any vocation. A taste for music and flower culture should be encouraged, for these two elements enter largely into the enjoyments of our home. Every farmer, for his own enjoyment as well as profit, should study the natural sciences, especially those most closely relating to his work. In no other vocation is man brought into such intimate connection with the Creator's laws. A farmer's solid enjoyment of life is much increased by observing and appreciating the world around him. By the above means, he is elevated above that plane of thought which leads him to plant potatoes only on Good-Friday or in the "dark of the moon."

Sixth, for increasing knowledge. A farmer can and should purchase good, wholesome books with which to improve his mind during his leisure hours. The average farmer neglects the cultivation of his mind too much for the cultivation of his fields. In farming, as in any other occupation, a man needs mind capable of deep, comprehensive thought,—one not easily swayed by the common superstitions and prejudices. Every farmer will find it greatly to his advantage to devote a portion of each day, especially during the winter, to the study of books and journals upon the care of stock, the culture of crops and fruit, and general farm management. By expenditures of time and capital in this direction, he acquires a knowledge of his business, by which his gains are greatly increased.

In the consumption of labor, a farmer consumes labor in the form of his own physical and mental exertion as well as the hired labor he may use and the labor of his teams.

ENTERPRISE ITEMS.

Mr. Thos. Jenkins and wife returned last Sunday evening from their trip East.

Kansas goes up head this year on corn, with an average yield of 43 bushels to the acre. New Hampshire is next with 42; Vermont, 39; Ohio, 36.7; Wisconsin, 34; Indiana, Iowa and Nebraska, 30; Michigan, 29; Missouri, 27.8; Minnesota, 25.4; Texas and Illinois, 25 each.

The immigrants! They roll through town every day; some with four-horse teams, some with ox teams, some with "spike" teams, and the other day one was seen with a single old white horse, that stuck in every mud-hole, attached to a rickety concern, which contained a small boy as driver, a woman and the inevitable baby that is always the accompaniment of every immigrant wagon. They were "going west."

Mr. C. P. BLACHLY,

Dear Sir:—I am most emphatically opposed to the introduction of English sparrows into this country. They do no more good than many native birds, and scarcely protect the elms better than a good tarring does. They are unattractive. They meet no check here to their naturally rapid increase. They soon become pampered and useless, or even troublesome. They injure fruit trees, exterminate native birds of greater beauty and value, and show conclusively that by the laws of nature they do not belong here. Dr. Crouse, our leading ornithologist, and many others concur in all, or nearly all, these views. Yours,

H. D. MINOT.

PRESS NOTICES.

We are pleased to note the enlargement of that model sheet, the INDUSTRIALIST. It is the par excellence of typographical neatness, and contains the *cream de la cream* of editorial ability.—*Neosho Falls Post*.

We should have mentioned before this that the Agricultural College paper, at Manhattan, has been enlarged to a 16-column paper and is now one of the neatest and spicest papers we receive. We suppose the managers found it necessary to enlarge to keep pace with the growing institution from which it is issued. By the way, Rev. John A. Anderson is making the Agricultural College the best school in the West for really practical education.—*Saline Journal*.

Major N. A. Adams, one of Manhattan's leading and most enterprising sons, left a large roll of greenbacks in Junction City yesterday, for a lot of cattle he purchased here.—*Union*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself

through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend. AMOS E. WILSON, President. MISS EMMA COOK, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome. IRVING TODD, President. A. N. GODFREY, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 11:15 A. M.
Going West..... 5:05 P. M.

FREIGHT ARRIVES.

Going East..... 5:05 P. M., and 3:50 A. M.
Going West..... 6:30 A. M., and 8:05 A. M.
Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 10 A. M.; Mrs. A. D. Goodwin, Sup't.

CONGREGATIONAL.—Rev. R. D. Parker, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. J. E. Platt, Superintendent.

EPISCOPAL.—Rev. J. H. Lee, Pastor. Service at 11 A. M. every Sabbath. Sabbath School immediately after service; Rev. J. H. Lee, Sup't.

FIRST METHODIST.—Rev. R. Wake, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; L. R. Elliott, Superintendent.

SECOND METHODIST (colored).—Rev. J. S. Grifing, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 3 P. M.

PRESBYTERIAN.—Rev. Wm. Campbell, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Rev. Wm. Campbell, Sup't.

Educational Calendar.—A wide-awake, spicy, newsy, *Kansas* paper for the Officers, Teachers and Patrons of *Kansas* schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the INDUSTRIALIST. Geo. W. Martin, Topeka.

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

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Warmly endorsed by Bancroft, Prescott, Motley, Geo. P. Marsh, Halleck, Whittier, Willis, Saxe, Elihu Burritt, Daniel Webster, Rufus Choate, H. Coleridge, Smart, Horace Mann, more than fifty College

Buildings.

This engraving gives a good idea of the relative situation of the several buildings used by the Agricultural College, and, so far as can be done in the space, a fair notion of the appearance of the buildings. The one on the right is at present known as the

COLLEGE BUILDING, though it is only temporarily used as such. It was built before our day, and was designed as one wing of an extensive barn. It is 42x100 feet, two stories high, and, besides the chapel, contains nine rooms which are used by the literary departments for recitation purposes.

THE NEW BARN is not shown upon the cut, but is situated about five hundred feet northeast of the College building, and is of the same size. It is admirably adapted to its purpose, furnishing complete accommodations for forty head of cattle and the horses needed on the farm.

About five hundred feet south of the College building stands the

MECHANICAL BUILDING, which is 38x102 feet and two stories high. The whole of the lower floor is used as a carpenter shop and is filled with benches, saws, lathes, etc. The upper floor furnishes three



Laboratory Building.

Mechanical Building.

Horticultural Building.

College Building.

KANSAS STATE AGRICULTURAL COLLEGE.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courier*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school, it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

KANSAS STATE AGRICULTURAL COLLEGE.

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W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MISS CARRIE STEELE, Teacher Instrumental Music.

THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular work-shop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, Engraver, or Printer. No charge made for the use of tools or materials for class practice.

WOMAN'S COURSE.

The course of study for woman is more practical and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc. The work-shops include those of Millinery and Dress-making, Printing, Telegraphy, Scroll-sawing, Carving, Engraving and Instrumental Music.

•TUITION ABSOLUTELY FREE!•

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of \$1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from \$2.75 to \$4.00 per week.

CALENDAR:—Fall Term began August 23d, and will close December 20th, 1877. The Spring Term begins January 3d, and will close May 22d, 1878.

For further information, apply to

JNO. A. ANDERSON, President.

Telegraphy.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

Vocal Music.—Regular instruction and drill in the science and art of vocal music, without charge. Recitations in these classes are not reckoned as an "industrial."

Dress-Making and Millinery.—Daily instruction and drill in hand and machine sewing; cutting, fitting and making dresses; and all branches of millinery, by a practical teacher.

Gardening for Profit.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture.

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases rather than for the benefit of the astronomer.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects incidental to the Kansas Farmer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping, and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

rooms for the Department of Instrumental Music, two for the Sewing Department, one for the Telegraph Department, and one for the Printing Department.

Immediately north of the Mechanical building is the **BLACKSMITH SHOP**, 20x40, containing two forges and the necessary tools for working iron. It is not shown in the cut, and is the only wooden building on the grounds, all the rest being stone.

One hundred feet east of the Mechanical is the **HORTICULTURAL BUILDING**, 31x80 feet, one story and a high basement. The main floor contains two lecture rooms, with apparatus cases; and the basement, in addition to cellars, furnishes a large working room for class practice.

One hundred and fifty feet south of the Mechanical building stands the

LABORATORY, cross form, 109x109 feet one story. It contains a lecture room, office, balance room, physical laboratory, two large chemical laboratories, and a kitchen laboratory. The

NEW COLLEGE BUILDING will be situated one hundred feet south of the Laboratory. The Practical Agricultural wing will be completed next summer.

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

Bookseller and Stationer.—S. M. Fox dealer in Fine Stationery, Pocket-Books, Envelopes, Gold Pens, Blank Books, etc. No. 127 Poyntz Avenue, Manhattan. 19-3m

Clother.—Wm. Knostman, dealer in Ready Made Clothing, Hats, Caps, and Gents' Furnishing Goods. A well selected summer stock on hand. Opposite post-office, Manhattan. 11-26

School District Bonds.—School District Boards about to issue bonds are invited to correspond with us before negotiating elsewhere, as we always pay the highest market price. Send to us for blank bonds, which are furnished free of charge. Address E. Gale, Loan Commissioner, Manhattan, Kansas. 19-tf

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

The Farm Department offers for sale YOUNG SHORT-HORN BULLS of the highest breeding, together with JERSEYS and GALLOWAYS. Also, a very fine lot of BERKSHIRE PIGS, eligible to record and the get of the celebrated boars Lord Liverpool and British Sovereign II. We have also for sale a few choice ESSEX PIGS, straight Jos. Harris stock, of both sexes. Our prices place this stock within reach of the general farmer. Address EDWARD M. SHELTON, Sup't Farm, Manhattan, Kansas. (11-tf)

Agricultural College Lands.—The lands are in the market, as provided by law, and for sale for one-eighth cash, balance in seven equal annual payments with ten per cent interest, payable annually. The lands are all choice selections, and prices range generally from \$5.00 to \$6.25 per acre. Some of the best tracts are appraised at from \$8 to \$10 per acre, and they are well worth the money. These lands are located in Washington, Marshall, Clay, Riley and Dickinson counties. For particulars, maps and descriptions, address L. R. Elliott, Agent, Manhattan, Kas.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

"It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact."

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, DECEMBER 1, 1877.

No. 33.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription. Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13—1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Imports from the United States.

A report by Mr. Plunkett on the commerce of the United States has recently been issued from the Foreign Office. From an elaborate summary published in the *Globe* we extract the following:

Speaking in round numbers, it may be said that more than one-half of the exports from the United States are made up of breadstuffs, mineral oils, provisions, and tobacco leaf; and if we add to them the one item more of raw cotton (\$187,662,525), we find that the five together represent about four-fifths of the total amount exported in 1876. In order to illustrate more clearly the extent to which the export trade of the United States depends upon raw, or only partially manufactured, articles, Mr. Plunkett shows that of the total domestic exports last year less than 11 per cent consisted of manufactured articles, and that they showed an increase of only \$377,856 (£75,571) over the previous year. Breadstuffs represent about 20 per cent; raw cotton, about 29 per cent; mineral oils, nearly 8 per cent; provisions, about 13 per cent; tobacco leaf, about 5 per cent; of the total domestic exports, excluding, of course, coin and bullion. The steady, although small, increase in the exportation of American manufactured cotton goods has, says Mr. Plunkett, attracted much attention, and has inspired great hopes on the American side of the Atlantic, while causing some anxiety on the other. While the importation of cotton goods has fallen off by nearly one-fourth, the exportation of cotton goods has almost doubled itself in the twelve months; and on a review of the whole four years it appears that not only has the importation of foreign cotton goods in that period fallen off almost to half what it was, but the exportation of American cotton goods has nearly quadrupled itself.

Mr. Plunkett gives the following facts bearing more directly on the trade between Great Britain and the United States: By far the largest amount of breadstuffs went to the British Isles. They took, in round numbers, over \$91,000,000 worth of breadstuffs out of a total of somewhat over 130,000,000. Provisions also were exported chiefly to the British Islands. They took over \$56,000,000 out of a total somewhat exceeding \$84,000,000. A new and singular feature in the provision trade between the United States and Great Britain is the increasing exportation of fresh beef, which is killed on that side of the Atlantic very largely, indeed as far away as Chicago, and is then sent over in ice to Liverpool, where it is sold at a lower rate than beef of the same quality can be bought for in the retail markets of New York. At the present low ruling of freights between America and English ports, this trade is found to be remunerative, and measures are being taken for carrying it on a still larger scale. The best customers for American iron and for manufactures of iron and steel were the British North American colonies.

The Inefficient Public Schools.

At West Point all that is required of the candidates is that they shall be "well versed in arithmetic, reading and writing, including orthography, and have a knowledge of the elements of English grammar, of descriptive geography, especially of their own country, and of the history of the United States." At the examination last year of a hundred and more picked men, of from fourteen to twenty-one years of age, chosen from all parts of the country, and not a few of them by competitive examination in the public schools, only one-half are found to have that thorough grounding in the elements of an English education which all our schools profess to give.

There is a text for many sermons in this—a text upon which teachers and school directors may profitably ponder just at this time, when a new school term is opening, and the scholars are coming back for work. What is required for admission to West Point is what every American citizen ought to have, and precisely what our common

schools are designed to teach. No doubt many of these rejected candidates could answer questions that would sound much harder than those put to them at West Point. Many of them could tell a great deal about abstract sciences, if the examiners only asked them; but when it came to "the three R's" and a little knowledge of their own country, they found that their schooling had profited them little. And many who do not go to West Point, but have to stand the test of experience in the world, make the same painful discovery. They may have spent years in the school-room and obtained a smattering of information on all sorts of subjects, but the only use they can find for it is to forget and begin their education over again. If we are ever going to make our public schools of real value, we have got to bring them back to their proper work. With all our fine school-houses and costly apparatus and elaborate textbooks, the same idea of a common school has been almost forgotten, and we believe it quite safe to say that what is to be called a sound English education was better supplied in the simple roadside school-house of a generation back than to-day in the most sumptuous brown stone buildings.—*Philadelphia Times*.

THE boys' studying book-keeping and the girls' thumping pianos will make potatoes four dollars a bushel.—*Exchange*.

The above is a senseless driveling. If it means anything, it simply means that our boys and girls should be taught nothing but how to plant and hoe potatoes. It is such shallow teaching as this that drives many a boy from the farm. Let the boys be taught to work, and taught to keep books neatly and correctly, and they will be better fitted for the business of life. And teach the girls to work—and to play on the piano or organ, too. There ought to be a musical instrument in every family. Manual labor is a necessity with a majority, and it will be so as long as time lasts; but when it becomes a mere drudgery, the toilers possessing no other knowledge or acquirements, life is scarcely worth the price it costs to sustain it.

Labor can be sweetened and lightened by a knowledge of the sciences, of music, of the laws of life; and the man who by voice or pen derides and attempts to belittle these as of no value to the "laboring classes," is an enemy to those he mistakenly or hypocritically professes to befriend. We are acquainted with farmers' daughters who know how to "put out a large wash" on Monday, or drive a mower or reaper in the field, and can play as fine music on the piano or church organ as "the best of them," and yet potatoes are not four dollars a bushel as a result of their musical knowledge. On the contrary, the sun rises and shines as brightly, and the potatoes are cultivated as skillfully, grow as large and are sold as cheap as if these girls were mere drudges and dolt; and, above all, their homes are brighter, their enjoyments sweeter, and their lives happier than if they were ignorant of all knowledge save that of knowing how to hoe and dig potatoes. The fellows who write such driveling as the extract at the head of this column ought to be sent to Osawatomie.—*Enterprise Gazette*.

AMERICAN girls, it would appear, have a clearer idea of the kind of an education which they need in these hard times than their teachers. They are crowding into the art schools, fitting themselves as designers, engravers, etc. The recent mania for china, too, is being turned to account as a source of income. There is hardly a village where women of artistic skill or taste are not trying to paint and bake china. The society on East Twentieth-st., and others, have established classes. Monographs and primers of the art are advertised every day. When the times revive, and the potteries now contemplated are really established, there will be no lack either of designers or decorators of china, and the art may be made as lucrative a business here as it is in France and England. Much of the finest work on the

Limoges faience and Doulton ware is done by girls and women, thoroughly trained for the art. In London, too, women are employed not only as architects but as house decorators, painting panels, embroidering curtains, and in one notable instance (the sisters of a well-known literary man), they take the entire arrangement and adornment of the house in their charge, directing the upholsterers and furnishing for their part, not carpets or chairs, but ideas and taste. These ladies have grown rich in their novel calling. Our American girls are quick-witted enough to perceive that certain commodities are more in demand in the market than Greek, and they will be as eager to supply them as their English sisters.—*New York Herald*.

Blunt but True.

There is said to be a young man in the Missouri penitentiary whose parents, at their death, left him a fortune of \$50,000. There is where his parents made a fatal mistake. If they had taken the precaution to invest that sum in a small dog, and shot him, and then had simply left the young man a jack-plane or a wood-saw, with printed instructions how to use it, the chances are that instead of being in the penitentiary he would to-day have been gradually but surely working his way up to a handsome competency, an honorable and an old age. But ever since the days of Adam and Eve, parents have made it a point to toil and struggle all their lives in order to realize a sufficient sum of money to purchase, when they are dead and gone, their sons each a first-class through ticket to the devil; and it is not much to be wondered at that so many of their sons reared in vice and idleness, as too many of them often are, have no higher ambition than to invest their inheritance in just that sort of transportation.

Coal.

We were considerably surprised the other day to learn from one of our citizens that he had discarded the use of wood in his house and had gone to using anthracite coal as a matter of economy. This is in the face of the fact that wood can be bought at from four to five dollars per cord, and soft coal at about four dollars per ton. Every pound of anthracite coal is brought from the mines in Pennsylvania—none of which are nearer to us than 1,200 miles, and by the ordinary course of transportation via the Erie canal and the lakes not less than from 1,500 to 1,900 miles.

In this connection we notice an article in a recent number of the *Philadelphia Ledger*, which says that the anthracite coal trade is about as depressed as it can well be. A sale of 125,000 tons made in New York realized only \$2.57 per ton. The rates of freight on coal on the Reading railroad from Schuylkill Haven to Philadelphia are given for twenty years back, and are \$1.25 per ton now as against \$1.35 in 1858, the lowest before the war, and \$3.60, the highest during the whole period. The total amount of anthracite coal mined during the present year is over 15,000,000 tons.

It is a remarkable state of affairs when coal can be mined in eastern Pennsylvania, and sent to Kansas to compete with wood at \$5 a cord and soft coal at \$4 per ton.—*Lawrence Journal*.

A Sensible Farmer.

One Kentucky farmer appropriates the yearly product of one acre of his farm to the purchase of reading matter for himself and family. He is a sensible man, and farmers generally should follow his example. They would make farm life more pleasant, add length to their days, give enjoyment to their wives, sons and daughters, and learn many things of great pecuniary value to them, if they subscribe for two or three good newspapers and one or two of the best magazines.—*Atchison Champion*.

ONE thousand car loads of lumber have been sold at Wichita this fall.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 1, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE Atchison *Champion* has come out in a new dress and has a clear and undisputed right to feel justly proud of itself, as we do of the handsome greeting given it by the *Patriot*.

THE Jewell County *Diamond* says the following and a good many other kind things of its competitor: "If we were to live a thousand years, we could not ask for a more honorable or fair-dealing competitor than Byron J. Thompson, of the *Jewell County Monitor*."

Press Changes.

Reno county: Mr. N. C. Boles has sold the *Hutchinson Interior* to Mr. S. W. Hardy. It is stated that Mr. J. W. Kanaga will swing the editorial pencil.

Jackson County: The *Holton Argus*, having got tired of taking wood (that never came) for subscriptions, has suspended publication.

WE have received the last bimonthly report of the Kansas State Board of Agriculture. It is fully up to its usual mark, which is the highest in the United States; and besides reflecting deserved credit upon Mr. Alfred Gray, Secretary, is one of the most valuable immigration papers extant.

Fall and Winter Care of Stock.

It is generally true that domestic animals suffer most from exposure and from insufficient food where the winters are the least severe, and where cattle food is the cheapest. In New England and New York, one of the principal cares of the farmer is to obtain a supply of cattle food abundant to last his animals from the time that grass begins to fail in early fall until the grass appears again in the spring. To this end pumpkins, roots, corn fodder, etc., are provided in abundance, and long before the frosts have made their appearance, this extra feed is added to that furnished by the pastures. Now, these farmers are not thus liberal out of the sentiment of kindness and humanity, but because long experience has taught them that such treatment pays, and, more, that only such treatment is profitable.

In regard to our own State, it must be confessed that a large proportion of the owners of stock are guilty of gross inhumanity and neglect of their own interests in the treatment given their domestic animals, especially cattle. Most of us remember the time when it was generally believed that in Kansas cattle wintered well on the prairies without fodder or grain. In the early history of the State, there was some show of reason in this legend; range was abundant and lightly pastured, and there was a greater variety of grasses, and they were probably more nutritious than those now found in the older portions of the State. Happily, this notion is not now generally held, but an equally dangerous idea is acted upon, namely, that during the fall months no provision need be made for cattle running at large. The truth is the fall is the most critical season of the year for the stockman, and the one in which the greatest losses of the year are sustained,—not from actual deaths, but by the starvation treatment given his animals during this season. After the prairie grass has once been scorched by the frost, and then half rotted by the fall rains, it is as tasteless and innutritious as pine shavings. To confine stock to such wretched sustenance as this during the fall months, is to be guilty of the greatest extravagance, the waste in fact of all the flesh gained

during the summer feeding. No one who sees the scores of hollow-eyed, cadaverous brutes which day and night wander up and down our highways, searching out every bit of garbage, and eagerly trespassing through every weak fence or half-opened gate, can doubt this.

There is one fact that every owner of a cow ought to believe with all his might, for it is a truth beyond a peradventure, one that admits of no gainsaying, namely, that the profits of an animal are directly proportionate to the food and care it receives. To expect profit from an animal whose food was only sufficient to keep alive the vital spark would be as sensible as to expect large dividends from a railroad whose locomotives were only allowed to get up steam sufficient to enable them to move empty cars.

Farmers, both East and West, use too little discrimination in feeding young and aged animals, store stock, and those in preparation for the shambles. Young and rapidly growing animals should be fed chiefly of such grains as oats, or feed like shorts or bran, rich in albuminoids needed in building up bone and muscle; while to mature and fattening animals, heating foods like corn will be most profitable.—Prof. Shelton.

Primary Education.

By this phrase we mean the first attempts to educate a mind untrained and undisciplined. What should be the character of primary education? To whom should be entrusted the intellectual training of children?

He who owns a valuable colt is very careful to have him properly trained. He employs an expert in training horses; one who shall correctly teach the animal the first lessons of the harness or saddle. He recognizes the importance of correct training at the outset. He knows that the ability of the animal to serve him in the future depends upon the manner in which the first lessons of obedience and restraint are presented and learned. An ability to discriminate between the different kinds of harness, or to name the different parts of a harness, is not considered a sufficient capital to set up one in the business of horse training. To all of these acquirements there must be added a profound knowledge of horse nature. Neither does it follow that a man can train a young horse for the turf because he can skillfully handle a plow team. In the training of horses, the necessity of starting right is generally recognized. The result of bad training is understood. Hence, ability, experience and success command a premium in the market.

But how is it in the primary education of children? To whom is entrusted the beginning of that mental training which the laws of this State have provided for every child within its borders? In most cases, this work is committed to young people, generally to young girls unacquainted with the laws of mind, inexperienced in teaching, and often of a very limited education. Probably three-fourths of the children in this State spend the first five years of their school life in schools taught by this class of teachers. Even in towns where the graded system of schools is established, the teachers of the lower classes are generally young girls. The phrase primary teacher is synonymous with young teacher. By our present system of school management, the training of the mind to work, the developing of its powers during the most important period of life, devolves upon the inexperienced. However superior in other respects, the graded system of schools is to the old system, in this one respect, inferior. Under

the old system, a great proportion of the children received their first lessons in mental training from those who were considered qualified to teach older and more advanced pupils.

The laws of mind are as uniform in their action as the laws of matter. Those whose high office it is to train the mind should understand the laws of mind. Those who have had experience in developing mind are best qualified to teach primary classes.

In what we have said above, we do not wish to be understood as inveighing against the teachers of our common schools as a class, or against primary teachers in particular. Among the common school teachers of this State, there are hundreds of earnest, capable, well-educated men and women. Their works do honor them. Their pupils are found in our classes. The progress of their former pupils in the studies pursued in the Agricultural College is entirely satisfactory, both to themselves and their teachers. They were started right at the outset. But from very many of the common schools of the State we have representatives of quite another sort. Young men and women who have spent several years in school are found poorly prepared to enter upon our course of study. They need to be grounded in the rudiments of an education. They must be taught how to study. Some have never been properly taught anything in school. Their time spent in school has been wasted. This has been through no fault of their own. This waste of time and more than waste of intellectual energy is chargeable to the custom which so generally prevails of entrusting primary education to ignorance and inexperience.—Prof. Ward.

Industrial Art Education. No. 4.

The first step in art instruction is drawing,—the language in matters of form. In the whole industrial world, drawing is called into requisition, for by its means facts and ideas are expressed and exchanged which could not otherwise be understood. The knowledge of drawing is a necessity of the working man's education, because he must be able to read and understand that language of form.

But in teaching him to draw it is not only this language which can content us. We want more and we can gain more. A close parallelism exists between drawing and writing or reading. First of all, we teach a child to read, and then, by using the power thus gained, to study a whole host of other subjects. So drawing is not or should not be learned simply out of regard for its own intrinsic merits, but because it opens a door to us through which we enter a wide world of knowledge. We are apt to regard the mere practice of drawing as something to be pursued for itself, because it is attractive and useful,—a pleasant accomplishment; but the true place of drawing in education is or should be on the same plane with reading and writing. Like them it is to be used as an instrument of the mind. As we do not learn to write for the sake of penmanship, so we do not learn to draw for the purpose of copying. In both cases the mechanical skill is but a means, not the final purpose.

The greatest benefit indirectly derived from the study of drawing is the systematic training of the eye,—a point of immense value to the artisan. Pestalozzi, the father of our present system of universal education, demanded that a fourth of the time given to instruction in our schools should be devoted to teaching — how to see diligently. We acknowledge the correctness of his philosophy, we admire his wonderful logic, but do we coincide with him in prac-

tice? We do not. President Anderson, in the Hand-Book of this Institution (1874), complains: "Less provision has heretofore been made for training the eye than of any other organ; although in the great industrial world it is the chief organ of perception, is needed even more constantly than the hand, in fact, is the pilot of the boat who rings orders to the latter as engineer."

Again, the taste of the pupil, especially if "taste is the recollection of the beautiful," as it has been defined, will be greatly improved by the long study of such beautiful forms as the different copies of every course of drawing will furnish. In order to establish and maintain those industries into which taste and beauty enter, we cannot do anything more effectual than to concentrate all our efforts upon this point. Through this channel the United States may serve to make in future the \$130,000,000 sent now annually to Europe for products of art,—in other words, for better taste. The study of drawing strengthens the imaginative faculties of the pupil. Before the mechanic or artisan constructs an object, he creates first within himself a mental picture of it, and the completeness of this picture is a grand factor to bring about the desired results.

These are only a few illustrations of the indirect value of drawing; columns could be added. Both for the peculiar culture which it imparts, and for its practicalness, it should hold a more conspicuous place in popular education. Stetson says: "As the result of extended and careful investigations, made from time to time, for the purpose of determining the character of the education requisite to produce skilled workmen and promote industrial welfare, European governments now lay greater emphasis upon drawing than upon any other study. Indeed, it holds so prominent a place in the education of the people of most European communities that it may be said, roundly, to constitute a fourth part of all the education the artisan receives. And yet, even in France, where the artisan has for some time been well educated in drawing, it is regarded of vital importance that the present instruction in drawing be increased, and of still better quality. The whole people should not only be made acquainted with its leading principles and mere industrial applications, they should be so instructed as to acquire, in a good degree, artistic habits of mind and manipulation."—J. D. Walters.

Kansas State Horticultural Society.

The eleventh annual meeting of the Kansas State Horticultural Society will be held at Parsons, Labette county, on Tuesday, Wednesday and Thursday, December 11th, 12th and 13th. The free hospitality of the citizens of Parsons has been offered to all persons from abroad during their attendance at the meeting; and it is expected that the several railway companies in the State will grant the usual reduction in fare, viz.: to return on one-fifth fare all persons who have paid full fare in going to the meeting.

All local and county societies are requested to be represented by delegates, and to make an exhibition of fruits grown in their respective localities; and especially is it desired that any new and rare varieties, and seedling fruits of merit, be placed on exhibition during the meeting.

Such persons as are unable to attend the meeting and feel an interest in its success, are earnestly invited to contribute to the exercises by forwarding essays, reports and communications upon subjects of interest generally, or as confined to their own localities.

Friends, let us have your help in working out the problem of a system of horticulture in our State which will secure success to all who may enter upon the pursuit.

E. GALE, President.

G. C. BRACKETT, Secretary.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 1, 1877.

Now is exactly the right time of the moon to subscribe for the INDUSTRIALIST.

There is a considerable quantity of mighty solid cold blowing around this week.

The mechanical department has built a very tasty pulpit for the Presbyterian church.

Prof. Platt's afternoon singing class and Miss Carrie Steele's music class are making rapid progress.

The examinations for the month of November were held yesterday, and the grades are getting themselves into shape.

School district boards about to issue bonds will find it to their interest to note the advertisement of this number calling for bonds.

From the number of new dresses which the young ladies are making for themselves in the sewing department, it is evident that Christmas will soon arrive.

The College stock has received valuable additions in the natural way, in the shape of three fine heifer calves; one each of the Short-horn, Jersey and Galloway breeds.

As we go to press, the hum of the threshing machine reaches us from the barn. The oats were threshed yesterday; all told, 440 bushels, an average of 44 bushels of excellent quality per acre.

Where has this term gone, anyhow? It will close before it seemed to be fairly started. Good work has been done and good results obtained by all the classes of both the literary and industrial departments.

The Berkshires sent out by the College farm the past season seem to have given great satisfaction to purchasers, judging from the letters we receive. They have certainly paid the farm well, one litter having netted \$134.

Don't fail to read the advertisements of Webster's Dictionary, the *Western Review of Science and Industry* the *Educational Calendar*, the *Educational Weekly*, the *Practical Teacher*, and for that matter, all the other advertisements in this paper.

Though not very tall yet, the evergreens scattered through the College grounds are decidedly attractive and enlivening. When the other trees are in leaf these cut but a small figure in the landscape, but flash the green color about in a winter day.

The fence around the new barn-yard is so far completed that the cattle have been shifted to their new quarters. They take to the new stalls as complacently as if they had never seen any others; and, when out of doors, snuggle against the straw stack as cozily as a cat to a stove.

Thursday was duly observed as a holiday. Recitations were omitted and full attention devoted to sermons, turkeys, skating and chat. Neither death nor serious illness has visit'd the college circle during the past year, and we all have abundant reason for manly and hearty thanksgiving to the good Father.

If that INDUSTRIALIST man doesn't cease punching a hole through our Center, we will discontinue the ordinary professional amenities.—*Yates Center News*.

Don't you do anything of the sort; just keep sliding along all the amenities you can spare, and instead of writing "Yates (.)" on your paper, we will hereafter make it "Yates Center." But when there is a four thousand edition to mail, "Y & ." is a deal better than "Wyandotte."

The following are the offices and calls on the College telegraph line at present:

Platt.....	R.K.
President's House.....	A.
College.....	C.A.
Mechanical Building.....	F.
Anderson.....	A.N.
Eckman.....	C.K.
Wilson.....	W.I.
Kedzie.....	K.
Blain.....	B.
Post-Office.....	P.O.
Superintendent's Office.....	S.
K. P. Depot.....	M.N.
G. C. Wilder.....	B.N.
Hoyt.....	Q.
Pillsbury.....	P.R.

Friday, Nov. 23d, the Alpha Beta Society met as usual, Vice-President Stiles in the chair. Exercises opened with sacred song and prayer. The question, "Should suffrage be restricted to those who can read and write," was warmly discussed and decided in favor of restriction. The Society then listened to a quartette. Under extempore speaking, the possibility of the students getting up an entertainment at the close of the term was discussed. General opinion seemed in favor of the two literary societies combining and doing something of the kind. Miss Kinsey favored

us with a declamation; subject, "An old man's reverie." Miss Glossop read an interesting essay on truth. Select reading by Miss Mails. Woman's suffrage will be discussed next week by Misses Parker and Coe on the affirmative, and Misses Kinsey and Wilson on the negative. S. H. W.

At the last meeting of the Webster Society, Mr. Cox was installed as Marshal, he having been detained on account of illness at the time the other officers were installed.

Mr. Patton was initiated, and Mr. John Gist, who has been absent from the Society for some time, was reinstated as a member. The question, "Resolved, That novels are productive of more harm than good," was debated by Messrs. Scott, Eckman and J. B. Dickson, on the affirmative; and Messrs. Anderson, Cox and A. F. Dickson, on the negative. The question was closely contested, and finally decided in favor of the negative. Extemporaneous speaking ensued with more than usual interest, all the members and several visitors taking part. The question as to whether the rights of suffrage should be limited to those who can read and write and the question of card playing as an amusement were among the principal ones; they being discussed thoroughly, pro and con. Mr. Storch declaimed, Mr. Hickey read an interesting essay, and Mr. Harvey read a very humorous selection. Under the head of new business, the time of meeting was changed from 7:30 to 7 P. M. A letter was read from Mr. M. F. Leisure, a former member of the Society, in which he urged the present members to spare no exertions to make the Society prosperous in the future as it has been in the past. The question selected for debate at the next meeting reads: "Resolved, That it is to the interest of the United States that tax-payers only should be allowed the right of suffrage." The speakers on the affirmative are Messrs. Burr, Harvey and Gist; negative, Messrs. Salter, Godfrey and Wood. After the report of critic and reading of minutes, the Society adjourned, all being convinced that the Society is increasing in interest as well as in numbers.

REPORTER.

ANSWERS TO CORRESPONDENTS.

C. R. A., New York City: As the endowment which supports this Institution came from the national government, and as the State is not taxed for its current expenses, students from other States are received upon the same terms as are those from Kansas, that is, without charge.

J. B. W., Chase county: You will have no difficulty in procuring a room where you can "board yourself." Many of our best students are living that way at a cost of from \$1 to \$1.25 per week. At the beginning of next term, there will be many opportunities for the selection of messmates. A party of four or six lessens the individual expense, and does not greatly increase the individual labor.

A. E. R., Greenwood county: Having knowledge in the head is one thing; ability to use it with the tongue, fingers or feet is quite another thing. Both are vital to success in practical life. A man might thoroughly understand the theoretical principles of carpentry, and yet, not having used the tools, be wholly unable to earn carpenter's wages. So in all other vocations. Accordingly, instruction is given in the following well-equipped Industrial Departments, and every student is required to recite in some one of them, as selected by the pupil or parent: For male students—The Farm, Nursery, Carpentry, Cabinet-Making, Turning, Wagon-Making, Painting, Blacksmithing. For female students—Dress-Making, Printing, Telegraphy, Scroll-Sawing, Carving, Engraving, Photography, Instrumental Music.

Each of these departments is conducted exactly as in daily life, and aims to give precisely the drill received by an apprentice. No charge is made, either for tuition or material, from male students taking the Industrials provided for them; nor from female students taking the ones provided for them, except in the Department of Instrumental Music, where the usual fee is assessed for the use of pianos or organs. Male students taking either Printing or Telegraphy are charged \$1 per month for the use of material and instruments.

THE TELEPHONE.

A large audience listened with pleasure to Prof. Kedzie's lecture upon the telephone Thursday evening, in the Presbyterian church. As the lecture is to be delivered elsewhere, we shall not attempt a synopsis of it, further than to say that it set forth about all that is known concerning the invention of the telephone, the principles of its construction and operation, its utility and probable capabilities. The lecture was illustrated by finely-executed diagrams, drawn by Mrs. Kedzie, and by many practical experiments with the telephones, in which the audience "joined" to its heart's content after the lecture.

Being deprived by sickness of the pleasure of listening to the lecture, we can vouch for the performance at the other end of the line, namely, in telegraph hall, more than a mile from the church. On a reading stand was placed the larger tele-

phone, having a wide ear piece or funnel-shaped "receiver," while on a table near by were a smaller instrument and a bell call. Two ladies and eight gentlemen had for some time been enjoying themselves as happened to strike the fancy of each, when the bell sounded an alarm, which was responded to by a graceful whirling of the crank by Mr. W. C. Stewart, who thereafter tossed the smaller telephone from his ear to his mouth very much as a boy shifts a hot potato from one hand to the other. Not hearing the questions to which he replied, the thread of the conversation was slightly fractured, and ran as follows: "Yes, sir," "no, sir," "all right," "eight, at a rough guess," "have counted, there are two ladies and eight gentlemen here." The larger telephone was put in the circuit and Mr. Amos E. Wilson made a short but vociferous speech, which was followed by one from Stewart. Then came a cornet solo by Mr. W. M. McColister who looked as if he thought that blowing a horn into a box was a singular way of facing an audience. After which Mrs. A. T. Goodwin and Miss Flora House sang the duet entitled "Fading, Still Fading;" which was followed by a brass-mounted quartette, played by Messrs. McColister, Pratt, Crump and Stewart, members of Manhattan band;—whereupon the ladies started for the church and the gentlemen rested from their labor.

After while the bells called, and "here," "yes, sir," "all right," etc., were shot off again, as an introduction to a cornet solo by Stewart. Presently came all sorts of questions and answers between different persons in the audience and Stewart, which had decided allusions to thanksgiving dinners, grindstones, elephants and chuck. We were favored by a duet sung in the church by Mrs. Goodwin and Miss House, and by another from Mrs. Adams and Mrs. Purcell. The whole affair was very enjoyable, and the lecture will prove a decided novelty among the holiday amusements in those cities which secure it.

ENTERPRISE ITEMS.

The first snow of the season fell Monday morning.

Albert Griffin and Dr. Lyman start on another temperance trip shortly.

Night express trains will be placed on the K. P. road after the first of December.

Rev. Wake is lecturing on temperance somewhere out west. Manhattan has more temperance lecturers than anybody.

NATIONALIST ITEMS.

From all parts of the State comes intelligence that fall grain of all kinds is looking finely, and that cattle and hogs are doing well. It is therefore probable that we shall have a good crop next year as well as this. The ground has been so thoroughly saturated with water that we can get along next year with a smaller amount of rain than usual, if it comes at the right time.

We cannot too strongly impress upon our farmers the importance of planting fruit trees, and plenty of them, especially apples. All the signs of the times point to a steady and rapidly increasing demand for fruit in the future. The exportation of fruit is rapidly becoming an immense business, and it is also becoming more and more a matter of necessity at home. Fruit is healthful, and its use should be encouraged.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending November 28th, 1877. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.	Inches of Rainfall.
	Max.	Min.	Mean.		
Thursday.....	22	52°	24°	39°.25	28.87
Friday.....	23	54	25	44°.25	28.60
Saturday.....	24	48	29	41°.75	28.50
Sunday.....	25	42	25	37	28.55
Monday.....	26	45	26	39°.75	28.45
Tuesday.....	27	33	9	26°.75	28.80
Wednesday.....	28	29	2	19°.25	29.08

Average temperature for the week, 35°.42.

Range of temperature for the week, 52°.

Rainfall for the week, .23 inches.

Educational Calendar.—A wide-awake, spicy, newsy, Kansas paper for the Officers, Teachers and Patrons of Kansas schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the INDUSTRIALIST. Geo. W. Martin, Topeka.

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange is sued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

The Western Review of Science and Industry.—A monthly record of progress in Science, Mechanic Arts and Agriculture. Sixty-four pages octavo. \$2.50 per annum, post paid. Single numbers, 25 cents. Edited by Theo. S. Case, Kansas City, Mo.

This journal has received the warm approval of most of the scientific periodicals of the country, such as *Popular Science Monthly*, *Harper's Weekly*, *New Remedies*, *American Naturalist*, *Science Observer*, &c., &c., and numbers among its contributors some of the most earnest and capable workers in the West, viz: Prof. G. Q. Broadhead, State Geologist

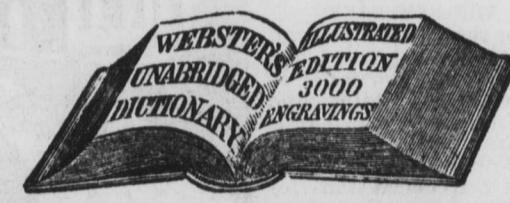
of Missouri; Prof. B. F. Mudge, State Geologist of Kansas; W. K. Kedzie, Prof. of Chemistry, State Agricultural College, Kansas; Prof. E. L. Bertrand, of the School of Mines, Colorado; nearly all of the members of the Kansas City Academy of Science, and many other well-known writers on scientific subjects.

The articles selected for its pages are taken from the very best periodicals of this country and Europe, and are chosen principally with reference to their reliability and their adaptiveness to the popular taste.

Being the only journal of the kind in the West, it should receive the patronage and scientific contributions of western men at least, the assurance of the Editor being pledged that as rapidly as the support given him will permit, he will enlarge the REVIEW and add to its attractiveness and usefulness by suitable illustrations, and in every other manner possible.

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Buildings.

This engraving gives a good idea of the relative situation of the several buildings used by the Agricultural College, and, so far as can be done in the space, a fair notion of the appearance of the buildings. The one on the right is at present known as the

COLLEGE BUILDING, though it is only temporarily used as such. It was built before our day, and was designed as one wing of an extensive barn. It is 42x100 feet, two stories high, and, besides the chapel, contains nine rooms which are used by the literary departments for recitation purposes.

THE NEW BARN is not shown upon the cut, but is situated about five hundred feet northeast of the College building, and is of the same size. It is admirably adapted to its purpose, furnishing complete accommodations for forty head of cattle and the horses needed on the farm.

About five hundred feet south of the College building stands the

MECHANICAL BUILDING, which is 38x102 feet and two stories high. The whole of the lower floor is used as a carpenter shop and is filled with benches, saws, lathes, etc. The upper floor furnishes three



Laboratory Building.

Mechanical Building.

Horticultural Building.

College Building.

KANSAS STATE AGRICULTURAL COLLEGE.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school, it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular work-shop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, or Engraver. No charge made for the use of tools or materials for class practice.

WOMAN'S COURSE.

The course of study for woman is more practical and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc. The work-shops include those of Millinery and Dress-making, Printing, Telegraphy, Scroll-sawing, Carving, Engraving and Instrumental Music.

TUITION ABSOLUTELY FREE!

No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of \$1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from \$2.75 to \$4.00 per week.

CALENDAR:—Fall Term began August 23d, and will close December 20th, 1877. The Spring Term begins January 3d, and will close May 22d, 1878.

For further information, apply to

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Telegraphy.—Four miles of line, twenty-five miles of line instruments, and daily instruction and drill by an experienced operator.

Vocal Music.—Regular instruction and drill in the science and art of vocal music, without charge. Recitations in these classes are not reckoned as an "industrial."

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Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects injurious to the Kansas Farmer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

rooms for the Department of Instrumental Music, two for the Sewing Department, one for the Telegraph Department, and one for the Printing Department.

Immediately north of the Mechanical building is the **BLACKSMITH SHOP**, 20x40, containing two forges and the necessary tools for working iron. It is not shown in the cut, and is the only wooden building on the grounds, all the rest being stone.

One hundred feet east of the Mechanical is the **HORTICULTURAL BUILDING**, 31x80 feet, one story and a high basement. The main floor contains two lecture rooms, with apparatus cases; and the basement, in addition to cellars, furnishes a large working room for class practice.

One hundred and fifty feet south of the Mechanical building stands the

LABORATORY, cross form, 109x109 feet, one story. It contains a lecture room, office, balance room, physical laboratory, two large chemical laboratories, and a kitchen laboratory. The **NEW COLLEGE BUILDING** will be situated one hundred feet south of the Laboratory. The Practical Agricultural wing will be completed next summer.

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, DECEMBER 8, 1877.

No. 34.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13—1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

English vs. English Grammar.

That the leading object of the study of English grammar is to teach the correct use of English is, in my view, an error, and one which is gradually becoming removed, giving way to the sounder opinion that grammar is the reflective study of language for a variety of purposes, of which correctness in writing is only one, and a secondary or subordinate one—by no means unimportant, but best attained when sought indirectly. It should be a pervading element in the whole school and home training of the young, to make them use their own tongue with accuracy and force; and, along with any special drilling directed to this end, some of the rudimentary distinctions and rules of grammar are conveniently taught; but that is not the study of grammar, and it will not bear the intrusion of much formal grammar without being spoiled for its own ends. It is constant use and practice, under never-failing watch and correction, that makes good writers and speakers; the application of direct authority is the most efficient corrective. Grammar has its part to contribute, but rather in the higher than in the lower stages of the work. One must be a somewhat reflective user of language to amend even here and there a point by grammatical reasons; and no one ever changed from a bad speaker to a good one by applying the rules of grammar to what he said.

To teach English grammar to an English speaker is, as it seems to me, to take advantage of the fact that the pupil knows the facts of the language, in order to turn his attention to the underlying principles and relations, to the philosophy of language as illustrated in his own use of it, in a more effective manner than is otherwise possible. Foreign languages are generally acquired in an "artificial" way, the facts coming ticketed with certain grammatical labels which the scholar learns as if they were part of the facts themselves; and the grammar part is apt to remain long a wholly artificial system to him. Almost every one can remember the time when it first began to dawn upon his mind that the familiar terms and distinctions of grammar really meant something. But this is partly because children are (and with good reason) set to learning foreign languages before their reflective powers are enough developed to make such things intelligible to them. If the pupil is bright enough, his Latin grammar comes by degrees to be to him something more than a heap of dry bones; and then he gets the benefit, in its application by analogy to other languages, his own included, of the hard work he has done upon it. A real understanding of grammar, however, he can get sooner and more surely in connection with his own tongue than anywhere else, if his attention is first directed to that which most needs to be learned, unencumbered with burdensome detail, and if a clear method is followed, with abundance of illustrations. English grammar can in this way be made to pay back, with interest, the debt which it owes to Latin.—Whitney's *Essentials of English Grammar*.

Farming.

Ex-Senator Chandler had something wise to say about farming as well as something significant about politics, when he addressed his neighbors at his farm in Michigan, not long ago. He declared that farming was not only the oldest but the most respectable occupation known to man. "If I had a boy to-day," he exclaimed, "I would rather put him on an eighty-acre lot that had never had a plough or an axe upon it, than place him in the best government office in the land!" The Ex-Secretary's address is full of practical, common-sense advice, drawn from his wide experience in politics and business affairs. A large part of it is devoted to an earnest appeal to young men bred on farms to make farming their business. Farmers, he says, ought to make their homes more attractive, more pleasant, so that their sons will not grow dissatisfied with their

dull surroundings and overcome with a restless desire to go to the cities. He says:

"Make your homes pleasant. Make them so attractive that your sons and daughters will love their homes better than any other place on God's earth. Make this business of farming so agreeable that your sons will see that it is the most healthful and profitable occupation in which they can engage. Build good houses and buy good implements. Don't get an old cracked cook stove; put in a good range. In fact, have every convenience you can, so that your wives and daughters will deem it a pleasure to perform their household work. In this way you can bring up your sons and daughters on the farm; but when you make the home repulsive, you drive them into clerkships and other menial positions, when they ought to be God's appointed lords of creation."—Champion.

How we Grow.

Already, says the Chicago *Tribune*, people are beginning to speculate as to what the population of the United States will be in 1880. The general estimate ranges between 45,000,000 and 47,000,000. Twelve States have taken their census in 1875. Michigan took one in 1874, and Missouri and Nebraska in 1876. The following table exhibits the figures of population by these enumerations compared with the late United States census in 1870. The right hand column shows the percentage of increase in the population of each State:

States.	U. S. Census.	State censuses.	Increase.	Per cent.
Iowa.....	1,194,020	1,350,544	156,524	13
Kansas.....	364,399	528,437	164,038	45
Louisiana.....	726,915	857,039	130,124	13
Massachusetts.....	1,457,351	1,651,912	194,561	13
Michigan.....	1,184,059	1,334,031	149,972	13
Minnesota.....	439,766	497,407	157,701	36
Missouri.....	1,721,295	2,085,537	364,242	21
Nebraska.....	122,933	257,747	134,754	109
Nevada.....	42,491	52,540	10,049	24
New Jersey.....	906,096	1,019,413	113,317	13
New York.....	4,382,759	4,705,208	322,449	7
Oregon.....	90,923	104,320	13,997	15
Rhode Island.....	217,353	258,239	40,886	19
South Carolina.....	705,606	823,447	117,841	17
Wisconsin.....	1,054,670	1,236,599	181,929	17
Total.....	14,640,636	16,863,020	2,252,384	

This rate of increase (about 15½ per cent) would not hold good in the other States, for if the same average per centage of increase were applied to all the States, it would give us a population of 44,564,881 for the year 1875, as against 38,567,617 in 1870, and would carry the population above 50,000,000 in 1880, which is hardly possible in view of the fact that immigration has fallen off to a half or a third of what it was previous to 1874. The State which will exhibit the greatest gain at the next census will probably be Texas. The enormous size of the State and the quantity of its fertile land have attracted vast swarms of immigrants. We should not be greatly surprised if Texas reaches fully 2,000,000 of souls in 1880, making her the Empire State of the South, as she will eventually be of the Union, if not divided, as she ought to be, into at least three States.

The Hub.

Boston is arguing the school question. The question that brought up the argument was the co-education of the sexes. A proposition was recently made to admit girls to study with the boys in the Latin school. The usual arguments pro and con were advanced by the opposing forces. President Porter based his argument against opening the school to girls upon the growth of civilization which tends to draw keen distinctions between the sexes and opposed all attempts to obliterate differences in dress, training and social distinctions between the males and females of our race. The New York *World* pats the President on the back for this, telling him that "he spoke from the solid ground of historical fact." Mr. Everett made the queer point that Greek literature is not fit to be taught to girls. "It differs in this respect," he explained, "from Roman literature, and so differs because while women were secluded in Greece they held a position of consideration at

Rome." Another speaker rested his opposition on a theory which if admitted would demand the abrogation of an important part of what is known as the higher education. He contended that "classical education is a failure as a matter of culture, and is positively pernicious to business." In Essex county it has ruined more boys and girls than any one thing else, and to extend it to girls is simply to widen its calamitous and emasculating influence. This, it will be seen, is the ground taken by a certain class in Kansas, only it goes farther. Our Kansas agitators only contend that the "higher education" shall not be taught in the common schools. The speaker last referred to would not have the classics taught in any school. Well, let the subject be agitated.—*Commonwealth*.

School Laws.

From the Topeka *Calendar*.

The following points from our school laws may be of interest to our readers:

1. There are no legal holidays for teachers.
2. A district officer cannot teach in his district without resigning his office.
3. The district clerk shall be fined \$50 for not reporting the tax levy to the county clerk.
4. Teachers shall not be paid their last month's salary until they make a term report to the district clerk.
5. The district clerk is liable to \$100 fine or three months' imprisonment for making a false report to the county superintendent.
6. The district board may require a teacher to teach any branch in the English language, providing he can teach it.
7. The district board shall be fined \$100 per month for refusing children residing in the district the privileges of school, and shall admit children living outside the district, but may assess a *per capita* tax on them.
8. Parents or guardians of children over eight or under twelve years of age, who live within two miles of a school, and are able to furnish their children with books and clothes, shall send them to school three months of the year, six weeks of which shall be consecutive, or pay a fine of not more than ten dollars for the first offense, and not more than twenty dollars for each subsequent offense.

DANIEL WEBSTER is credited with having said: "If I had as many sons as old Priam, I would have them all learn a trade, so they would have something to fall back on in case they failed in speculation." A Philadelphia paper moralizes thus sensibly thereon: "The number of young men and girls who are brought up to no useful trade or calling is on the increase. The effect of this is seen in political life, where thousands of men are begging, as at present at Washington, for 'position,' with a vague idea that untrained powers and ignorance can find shelter in some cosy nook where they may at least draw their pay. Being practically of no earthly use to themselves or any one else, they only hope to find some place where they can continue to exist without benefiting any one. A destitute young man, without a trade, and who is not qualified by practice to become a tramp, is very likely to become one, or fare even worse by becoming a criminal.—*Exchange*.

Bound for Kansas.

Thousands of people are now coming to Kansas. There is no longer a doubt in the minds of the knowing ones that this country is ahead of any other in the world. All it needs is more people, men to develop her fertility, to break up her wild prairies, and send their children to our own schools, to convert our waste places into beautiful blue-grass lawns. They are coming, and we are glad of it. Had we it in our power, we would gladly tell every man in America of this beautiful country, that he might come here and live and bless us for the information.—*Exchange*.

Do you take the INDUSTRIALIST?

THE INDUSTRIALIST.

SATURDAY, DECEMBER 8, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE second number of the *Educational Calendar* is at hand, and, if possible, is better than the first, being crammed with a great variety of crisp items. Every teacher and every body at all interested in Kansas educational news should at once send twenty-five cents to Geo. W. Martin, Topeka, and secure the *Calendar* for a year.

English Sparrows.

EDITOR INDUSTRIALIST:—D. H. Minot says he is opposed to the English Sparrows, and gives reasons for his opposition as follows: "They do no more good than many native birds." This is equally a reason for killing off the native birds. "They are unattractive." There doubtless are natures to which birds are unattractive. "They meet no check here to their natural increase." Therefore, inferentially, let us rejoice that native birds do. "They soon become pampered and useless." Eat worms till they can eat no more; hence, "unattractive." "They injure fruit trees." False in every possible sense. "They exterminate native birds." The man does not live that can site an instance of a sparrow making attack upon another bird. "By the laws of nature they do not belong here." Must leave that to nature's lawyer. "Dr. Crouse concurs in these views." If the articles that have been published over that signature be genuine, he knows nothing of the habits of the sparrow, or he is a trifler and a deceiver.

TOPEKA.

Which?

The conundrum is beginning to hustle itself around with a good deal of vigor and persistence, whether the English language was really gotten up for the express purpose of being parsed, or for the other and very different purpose of being used. There are many modest people who humbly entertain the notion that words are simply instruments for conveying an idea from one mind to another; that, as with other tools, their utility constitutes their greatest value; and that he who is able to use them most expertly in clearly conveying exact ideas, is a better master of English than he who is able to dissect a sentence and deftly distribute the several "elements" in some one of the numberless pigeon-holes authoritatively announced by the latest analytical grammarian, who always has a different set of pigeon-holes from that ever before authoritatively announced.

People who entertain this notion do so very quietly, and are in the habit of carrying it around in a meek, deprecating sort of way, which of itself is an apology to all the dogmatic grammarians who do the high authority business, and who chiefly regard the language as a thing to be "analyzed" and "parsed." The former have about the same notion that a sensible farmer would have in a dissecting room where a hundred medical students were practicing. He had always regarded his body as an admirable machine for doing splendid work. They, on the other hand, complacently pitying his ignorance, show that science wins its brightest glory by putting a Latin name a yard long to a muscle smaller than a bean, and by showing the relations of this muscle to the rest of the organism. A few sentences of technical lingo, fired rapidly and dashingly into his awe-stricken soul, completely demolish him, and he goes away with an overpowering sense of the "learning" of them, they are reminded that they have a

those medicusses; nor is he ever again really certain that his body was chiefly made for use and not for dissection.

Now, while no one questions the value of anatomy to the surgeon, are we all to be doctors? and is it imperative that we shall be skillful dissectors before we can properly use our bodies? In the same way, while this analysis business may be of value to an author of fancy grammars, are we all to be such authors? and is it necessary that those who are not shall be put through the pigeon-hole drill? Is the English language to be taught in the public schools chiefly as a thing to be parsed, or as a tool to be used; and is the great aim to be that of turning out fancy grammarians, or that of turning out expert workmen in the use of words for stating ideas? Which?

Take Care of Your Body. No. I.

Good health is the greatest earthly blessing. Compared to it, all others sink into insignificance. What are lands, houses, furniture, horses, carriages, money, rich apparel, sumptuous fare, or education, without health to enjoy them? A man in California once offered a million dollars to any one who would permanently cure him of the rheumatism. Notwithstanding its value, the great majority of people are more careless in the use of means to retain it, and more profligate in using what they already possess, than in securing the above-named minor blessings, forgetting the great fact that "the life is more than meat and the body than raiment." Health is the natural, normal condition of the body, yet how few really possess it; and what multitudes there are who shorten their lives and spend years of pain from dyspepsia, lung diseases, rheumatism, fevers, and a thousand and one other ailments to which mortal flesh is liable.

Probably three-fourths of all the bodily suffering to which we are subject arises from three causes: Trouble with the digestive organs, with the breathing apparatus, and from exposure or lack of suitable protection to the body. Now, while a considerable part of this trouble may come to us by inheritance on account of the sins of our ancestors, still it is true that a large portion of it is the result of our own violation of the plain, common-sense laws of the human system, which we have been careless in disobeying, and "because sentence against an evil work is not executed speedily, therefore the heart of the sons of men is (carelessly) set in them to do evil." Though the penalty for the violation of law is long delayed, it is none the less sure to come; and one important fact is that when the mischief is done, frequently there is no remedy, and thousands have "found no place of repentance though they have sought it carefully with tears."

By all manner of means, then, take care of your digestive organs. The American people are noted for their high living and fast eating. Such a variety of highly-seasoned dishes is placed before us to pamper our appetites that we incline to eat more food than our systems require, to say nothing of those kinds of food which are decidedly indigestible. Especially is this true of students, teachers, and all other classes of persons who take but little physical exercise; and we eat so fast that the food is not prepared for the organs of digestion. We thus overwork those organs, unfit them for duty, and wear them out before their time. They only partially perform their work, which gives rise to many kinds of pain and disease. Many persons forget that they have any such organs until, by the abuse of

them, they are reminded that they have a stomach and that it is time to take care of it. A general rule is, eat such kinds of food, such an amount of it, and at such times as a little knowledge of the human system, combined with a good share of common sense, will dictate, and such as are found to agree with you; and should these organs get out of good working condition, do not allow them to remain so, but give them rest or apply such remedies as are known to be beneficial.—Prof. Platt.

Horticultural Societies.

Some have seemed to think that horticultural and pomological societies were of little moment; and those who have insisted upon distinctive organizations to promote the above interests, have been looked upon as little better than fanatics in some of the older States, and occasionally even in Kansas. We do not ascribe this to any inherent weakness, but to the demoralizing effects of bad example upon intelligent Kansans; a weakness, of course, to which poor human nature is always subject, for the best of men have their failings.

Horticultural societies have exerted a powerful influence both in the old world and in the new; and for many years have been efficiently shaping important interests. The working membership, as seen in the record of all horticultural and pomological societies as far as we know, has been small, but the few who do the drudgery of the organization are the representatives of a vast host of men and women, both in county and city, who are constant workers and earnest co-operators with such organizations. Their sympathies are with these societies, whether national, State, county or town. While the few have been ostensibly doing the work, they have always been able to fall back upon a large and earnest constituency for support. Ambitious men in some of the older States, not understanding this peculiar feature of their existence, have tried to brush them out of the way, but hosts of friends have always been born of the dust which their attempted destruction created.

This is especially true of the Pomological Society of Michigan, and the Horticultural Society of Illinois, and must be true of every real horticultural organization in the country. And the reason for this condition of things will be found in the following facts: These societies seek to promote in the most practical way (1) the interest of the orchardist, (2) the small fruit culturist, (3) those who are seeking to promote forestry, (4) the vegetable gardener, (5) the floriculturist, (4) whoever desires to ornament or beautify his grounds. Look these classes through, one by one, add them together, and then consider the average intelligence of the real workers in any one or all of these classes, and who will say that they do not form a constituency of which any society may be proud? We have in this fact not only the reason why such societies are hard to kill, but also the reason why they are able to do, quietly and yet efficiently, a vast amount of work.

The Horticultural Society of London has for many years been an efficient worker in promoting its distinctive object; and associated in this work, we find some of the best minds of England. Our own National Pomological Society has made itself felt for many years in promoting the interest of fruit culture. We can hardly, at this early day, estimate the influence of our State and local societies in promoting the general interests of horticulture. Some of these State societies in the West have largely promoted the work of immigration, while in both State and local societies will be found some of the most efficient and successful students and observers of the age. We will not attempt to state what has been done in Kansas, but only remark that, as Dr. Warder will remember, "they do in Kansas" whatever they try to do anywhere else.—Prof. Gale.

Let us Do it.

Much has been said and written for the last ten years about the metric or decimal system of weights and measures; and it can be said that to-day our nation is united in acknowledging the immense advantages which it has over the present system, if we may call it a system at all. The teacher knows well that it would reduce his labor in teaching arithmetic fully one-fourth. The mechanic has been told that it would save him from ten minutes to two hours of very disagreeable work in measuring, estimating and planning every day. Our merchants know that the adoption of the system would greatly simplify their book-keeping. Manufacturers, railroad and other companies know that it would save them thousands of dollars annually in reducing and computing every branch of their work. The government knows that the international system would do away with fully one-half of the army of clerks in all the exporting, importing and custom houses, who are busy now in reducing the weights and measures of one country to those of another. We know that besides the vast saving effected in every business in the land, greater accuracy and convenience would be secured and frequent confusion and perhaps litigation avoided. We know that our own John Quincy Adams said of it fifty years ago: "Considered only as a labor-saving machine, it is a new power offered to man, incomparably greater than that which he has acquired by the new agency which he has given to steam. It is in design the greatest invention of human ingenuity since that of printing." All that we know very well, but still our progress in adopting the system is discouragingly slow. What is the reason?

The indifference of the masses regarding reforms of any kind is astonishing. It seems strange that our fathers did not adopt the decimal system for weights and measures a century ago, when our admirable decimal system of coinage was constructed, as Jefferson desired; but more inexplicable still that at the Centennial Exposition the antiquated system should be found prevailing in unpleasant contrast with the system used by nearly all other nations. Until a whole army of enthusiasts forces it upon the people, no results can be expected. Take position in the front ranks, teachers; it will be hard work, but the price is well worth it.

The main reason for the unexpectedly slow progress of the meter among us is the utter want of measuring units. Mere explanations and talk of and about it cannot suffice. A five-cent meter-rule placed in the pocket of the school-boy is worth hours of argument. We must begin to use it wherever we can; and before we can use it, we must have it, not in the appendix of our text-books only, but in our hands. Since the founding of the American Meteorological Society, "an association of friends of the metric system for the purpose of introducing it in the United States," metric weights and measures can be obtained at their central office in Boston and their branch depots (F. W. Giles, Topeka, Kas.,) for one-half of their actual cost. Let the school boards procure a "school set" of the different units, and then use them. Substitute meter-sticks for your blackboard pointers; make them yourself rather than do without them. For your own use, buy a folded brass pocket-meter; it is the neatest and handiest measure you ever saw, and costs but a few cents. Then use the meter wherever you get a chance, exclusively; and, of course, if you are not thoroughly acquainted with the system yourself, study it without delay. Such is the simplicity of the system that it might be learned within ten minutes. By all means teach it AND USE IT.—J. D. Walters.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 8, 1877.

Felter's Book-Keeping will be used by the first-year class next term, it being by far the best textbook upon that subject now out.

School district boards about to issue bonds will find it to their interest to note the advertisement in this number calling for bonds.

Say, you *Calendar*, send us regularly two copies for clipping and one for file. When "Vol. I." is completed, we will also accept a bound file in addition to above. There isn't anything mean about this establishment.

The prayer-meeting last Friday evening resolved itself into an experience meeting, and was a spiritual feast. The time was fully occupied by the students in telling their various christian experiences. It was really good for one to be there.

They have dug a well in the new barn-yard and struck a "boiling spring" some eight or ten feet from the surface. After pumping at it a couple of days without being able to lower the water line, the well has been put in. The well is very conveniently situated, and its completion about completes the various fittings of the new barn.

Will Burnham writes from West Point, N. Y., to one of our students, stating that their socials must always break up at eleven o'clock, and that the cadets must be in bed at half-past eleven. If one takes a girl, he is given twenty minutes additional. Will says he is not accustomed to the twenty-minute rule and takes exceptions accordingly, although he admits that twenty minutes are better than nothing. We sympathize.

We decidedly enjoyed a call from Mr. H. X. Devendorf, who is representing the Topeka *Commonwealth*, and who gave us the pleasure of a careful inspection of the buildings, appliances and matters generally. He has traveled before, and has the knack of speedily making friends and picking up information at the same time. We shall be glad to see him again, as we are always glad to see the paper he represents.

Having finished Political Economy, that class is taking a brief course in parliamentary law. Every man in this country is bound to be in all sorts of meetings where a knowledge of rules of order is valuable. Upon the invitation of the class, several of the students met with them for practice Thursday afternoon, and had a lively time over points of order, precedence of motions, and rulings generally. They will meet again next Wednesday.

We have received the announcement for the winter term of the Manhattan Preparatory School, Prof. J. H. Lee, A. M., Principal. From years of personal knowledge, we can speak in the highest terms of Prof. Lee's competency, ability and fidelity as a teacher; and those wishing to study Latin, Greek or kindred branches can nowhere find a better opportunity. The rates of tuition are remarkably low, and the experience and suavity of the Professor high. The next term will open January 2d and close May 8th, 1878.

Report of the Alpha Beta Society for Nov. 30th is as follows: President Wilson in the chair. Society opened by sacred song and prayer. By the regular debate, it was proved that woman is as capable of invention as man. The *Gleaner* was then read by Henry F. Coe and Miss Emma Cook. Society was then favored with a quartette, "The skating glee," after which it passed to extemporaneous speaking. The Society is becoming rather strict in its discipline. One member was fined for non-performance of duty.

Question for debate next week: "Resolved, That law schools and theological seminaries should be opened to ladies." Affirmative, Lewin and Sikes; negative, Stiles and Gale. Miss Dora Kinsey and Wm. H. Sikes appointed to edit the next number of the *Gleaner*. As this will be the last issue for this term, it is hoped members will be active in contributing. The Society purchased "Robert's Rules of Order."

S. H. W.

The Websters met Saturday, December 1st, at 7 o'clock, P. M. After the opening exercises, some of the speakers being absent, the debate was postponed for a short time. Extemporaneous speaking then ensued, in which several visitors participated, making it very interesting. Such questions as "Specie payment," "The improvement of the mouth of the Mississippi," and "Should ladies be admitted to theological schools?" were freely discussed, pro and con. The absent speakers having arrived, the debate came next. The question as to the advisability of restricting the right of suffrage to tax-payers was thoroughly argued by Messrs. Burr, Harvey and Anderson, on the affirmative; and Messrs. Salter, Godfrey and Wood, on the negative, the decision being given in favor of the negative. The name of Mr. Beacham was

proposed. The following question was then selected for debate at the next meeting: "Resolved, That every man is the architect of his own fortune." The speakers on the affirmative are Messrs. Bell, Todd and Anderson; on the negative, Messrs. Eckman, Harvey and Godfrey. The Society was favored by the presence of several visitors, the most of whom were ladies. Although the Society does not admit lady members, it is always glad to entertain them as guests. REPORTER.

PRESS NOTICES.

An old student thanks the managers of the State Agricultural College for an "education of real value." Some point to that.—*LaCrosse Progress*.

The Agricultural College, at Manhattan, is the only institution in Kansas where your boys can receive a practical and theoretical education combined. Its management is in the hands of practical men, and we have yet to hear of the College turning out a poor workman or scholar. Kansas is proud of her schools, and particularly so of the one above-mentioned.—*Hays City Sentinel*.

The *INDUSTRIALIST*, published at Manhattan under the auspices of the Agricultural College, for typographical neatness is a "thing of beauty." And this leads us to say that the College deserves well of every one who wishes to encourage a system of practical education. We are assured that no institution in the West can afford greater facilities for the acquirement of that knowledge so useful in the ordinary affairs of life. The education imparted by it is both thorough and economical, and we are rejoiced to know that it is so favorably regarded by the press and people of Kansas.—*Humboldt Inter-State*.

The *INDUSTRIALIST*, published at the State Agricultural College at Manhattan, by the students learning the printing business, comes to us enlarged, but only improved in the greater amount of matter furnished, for it was ever first-class. We have had always a warm attachment for the little paper and its sterling editor, Rev. John A. Anderson, and feel honored in the knowledge of his friendship. The paper is only seventy-five cents per year, and as it is the highest authority in all matters pertaining to agriculture in Kansas, it should be in the hands of every farmer in the State.—*Burlingame Chronicle*.

EDUCATIONAL CALENDAR ITEMS.

The *INDUSTRIALIST* is now circulating to the number of four thousand weekly.

The annual school fund received during the month from various sources was \$9,845.10.

During the month of November, 1877, the Commissioners of the Permanent School Fund invested \$19,482.60 of said fund in district school bonds.

The Agricultural College has five miles of telegraph wire, and twenty-five instruments. Daily instruction and drill is given by an experienced operator.

Boys, don't be so rough. While playing football at Cedarvale, last week, one boy accidentally pushed another boy over, breaking his collar bone in two places.

Lawrence is agitating the question of introducing the study of book-keeping in the common-school course. Thus, one by one, the best schools are wheeling into line.

J. E. D. Williamson, principal of public schools of Grantville, Jefferson county, writes: "I am much pleased with your Book-Keeping. It is just the thing we have been needing."

The meeting of the Superintendents of Public Instruction of the different States will be held in Washington in the second week in December. Superintendent Lemmon will attend.

By the latest advices, fifty-four public schools in Kansas, and twenty in the States of Iowa, Kentucky and Tennessee, have adopted Felter's Elements of Book-Keeping during the last three months.

It is reported that over seventy-five evening classes in book-keeping will be organized within the next three weeks, for the most part by the principals of the public schools. Let the good work go on.

The county normal institutes in Kansas have been, with one or two exceptions, a complete success. The few failures were caused by an unfortunate selection of conductors. There will be fewer mistakes next year.

At Oskaloosa they still believe in the old maxim, "No lickin', no larnin'." The *Independent* recently said: "To-day was a 'field day' at the public schools, with the principal at least, for he gave eleven boys a licking, one after another."

County Superintendent Van Sickle, of Crawford county, is of the opinion that the people should unite in supporting the teacher, in order to make a school successful. Mr. Van Sickle makes a very interesting column in the *Girard Press*, filling it with useful topics.

The Leavenworth school board has determined upon one session of school each day. The grades of the seventh to the tenth will be in session from 9 A. M. till 12:30 P. M.; all the other grades will have also but one session, commencing at 9 A. M. and continuing till 2:30 P. M., with a recess of twenty minutes.

It is said that it costs about \$1,200 to arrest, convict, sentence and provide for each man who is sent to the State prison. What does it cost to educate a man? The educated man is a growing power for good in the State and for the State, as long as he lives,—the ignorant man or woman is a burden to be carried and cared for.

Commencing with the January number, we shall publish a historical chronological calendar for Kansas, for each day of the year 1878. This will be especially valuable to teachers in teaching the history of the State. If preserved, it will become invaluable for reference. No teacher can afford to lose this opportunity to study Kansas history.

The dedicatory exercises at the State University, on the 22d ult., were of a very gratifying character. Governor Anthony presided. Hon. Solon O. Thacher was the principal speaker of the occasion. Speeches were made by Governor Anthony, Superintendent Lemmon, Rev. F. T. Ingalls, T. D. Thacher, T. C. Henry, V. P. Wilson, and Prof. Canfield.

If the mechanical appearance of the *INDUSTRIALIST*—the work being all done by students, none

of whom have been at it over six months—is any indication, the authorities at the Agricultural College are certainly making a success of teaching trades. The type-setting and the arrangement of the matter, its clear print, make the paper just as good as anybody could do it.

Noble L. Prentis contemplates publishing a book containing his European letters to the *Commonwealth*, and possibly some other matter. He desires to receive subscriptions sufficient to justify its publication before undertaking it. The book will be made to sell for from \$1.25 to \$2.00 per copy, by mail. If sufficient encouragement is received, it will be done in the best style of the *Kansas Publishing House*. Subscriptions will be received at this office.

The *American Young Folks* appears before us, as usual, brimful of entertaining and instructive matter for the young folks. We congratulate Major Hudson upon its success as a popular, cheap and interesting publication for the boys and girls of the West. The children's correspondence is one of the most valuable features of the paper, and we can never lay it down until we have read the "Try Club" letters from beginning to end. Issued monthly from the *Kansas Farmer* office, at Topeka, at fifty cents per year.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment" rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is

own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

MARRIED.

McCOLLISTER—MERRIFIELD—At the Agricultural College, Thursday evening, December 6, 1877, by President Jno. A. Anderson, Mr. Wm. M. McCOLLISTER and Miss MOLLIE M. MERRIFIELD, all of Manhattan.

The best of good wishes from a host of friends will be heartily extended to the happy pair as the above surprise makes itself known, and the same wishes will follow them as rays of hope glinting into their future lives.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 11:15 A. M.
Going West..... 5:05 P. M.

FREIGHT ARRIVES.

Going East..... 5:05 P. M., and 3:50 A. M.
Going West..... 6:30 A. M., and 8:05 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

AMOS E. WILSON, President.

MISS EMMA COOK, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

IRVING TODD, President.

A. N. GODFREY, Secretary.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 10 A. M.; Mrs. A. D. Goodwin, Sup't.

CONGREGATIONAL.—Rev. R. D. Parker, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. J. E. Platt, Superintendent.

EPISCOPAL.—Rev. J. H. Lee, Pastor. Service at 11 A. M. every Sabbath. Sabbath School immediately after service; Rev. J. H. Lee, Sup't.

FIRST METHODIST.—Rev. R. Wake, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; L. R. Elliott, Superintendent.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 8, 1877.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paula Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Courier*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our country should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST'S" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Neosho Falls Post*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atherton Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advan-

tages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courier*.

Has become just what it was intended to be—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

The Educational Weekly.—The union of the School Bulletin and N. W. Journal of Education, Wisconsin; the Michigan Teacher, Michigan; the Illinois Schoolmaster, Illinois; the Nebraska Teacher, Nebraska; The School, Michigan; Home and School, Kentucky; the School Reporter, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States. The strongest consolidation of educational journals ever affected in this country. The broadest in its scope; the handsomest in appearance; the most varied in its contents; the freshest, strongest and latest of the journals of its class. Good for the teacher! Good for the scholar! Good for the citizen! Every department is in the hands of a special editor. Its "Practical Hints and Exercises" are invaluable to the teacher of any grade.

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To single subscribers 1 year, \$2.50; 6 months, \$1.50. In clubs of five..... " 2.00; " 1.25. Clubs of ten or more " 1.50; " 1.00.

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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor THE PRACTICAL TEACHER. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, THE PRACTICAL TEACHER, 170 Madison St., Chicago.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, DECEMBER 15, 1877.

No. 35.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription. Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13
Teachers.....	1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73= 1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51= 97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Recent Rulings of the State Superintendent of Public Instruction.

From the *Educational Calendar*.

1. Temporary absence of a school officer from the district does not work a forfeiture of his office unless on account of that absence he shall be unable to discharge his official duties. If on account of his absence, the district should be put to great inconvenience, and its business be neglected, the County Superintendent should consider the office vacated, and on a petition of a majority of the legal voters (both male and female) of the district, as provided in article 2, section 11, page 12 of School Laws, appoint some suitable person to the place.

2. Contracts of every kind, made between the board of directors of a school district and one of their number, being contrary to public policy, are illegal, and if not void, at least voidable. Such contracts should never be made. If either member of the board desires to teach the common school of the district, furnish fuel, furnish materials for the construction of the school-house, or do any kind of work for the district for which he is to receive compensation, he should resign his office, and after the appointment of his successor, make his contract with the new board.

3. If a person agrees to teach a district school for a certain sum per month, and hires an assistant to take charge of a part of the classes, must that assistant hold a teacher's certificate?

The law does not authorize a district board to make a contract with one teacher for the services of another. All such contracts are illegal and void.

4. The law requires the State Board of Education to hold a meeting at Topeka on the fourth Monday of August, for the examination of candidates for State certificates. They may hold examinations "at such other times and places as may be deemed necessary."

5. A teacher's certificate to be valid must be issued in strict compliance with law. County examiners are not authorized to issue certificates on private examinations.

6. The officers of a school district constitute the board of directors in such a sense as to be able to transact the school business of the district only when in session as a district board. As the law is silent as to how, when and where the district board shall be convened, each board should adopt a set of rules for its own government.

7. A school warrant signed by the individual members of a district board, at different times and places, is not valid unless its issue was previously ordered by the board in session. Such a warrant may be made valid after having been issued by future action of the board.

8. When a new district has been formed, and the County Superintendent has determined the amount due the new district from the old, as provided in sec. 4, art. 3, page 14 of School Laws, the district retaining the school-house cannot issue bonds with which to pay the sum due, but must levy a tax as provided for in the section quoted.

9. Improvements upon school land entitle the owner to no special privileges as a purchaser, unless accompanied by actual settlement, and made prior to the appraisement.

10. Special privileges, such as rights obtained by occupancy or residence upon school lands prior to the appraisement, cannot be acquired by purchase.

11. The commissioners for the management of the State permanent school fund are not authorized to pay above par for school district bonds.

Education.

The wisdom of legislation upon the part of Congress, in aid of the States, for the education of the whole people in the branches of study which are taught in the common schools of the country, is no longer a question. The intelligent judgment of the country goes still further. It is regarded as also both constitutional and expedient for the General Government to

extend to technical and higher education such aid as is deemed essential to the general welfare, and to our due prominence among the enlightened and cultured nations of the world. The ultimate settlement of all questions of the future, whether of administration, finance, or of true nationality of sentiment, depends upon virtue and intelligence. The entire voting population of the country are not yet able to read or write. It is encouraging to observe, in connection with the growth of fraternal feeling, in these States in which slavery formerly existed, evidences of increasing interest in universal education, and I shall be glad to give my approval to any appropriate measures which may be enacted by Congress for the purpose of supporting, with national aid, the local system of education in these States, and all the States.—*President's Message*.

A Good Sign.

One of the most prominent real estate men in Leavenworth—one who had done a very large business in loaning money for eastern capitalists—said to us yesterday that there was no demand at all for money among farmers this year. Heretofore he has had no difficulty in placing all the loans he wanted to make on good farm property, but this season the farmers seem to have the funds they need, and don't want to borrow. This, we take it, is one of the very best signs of the times. In this country, where agriculture is the basis of all business, we are all interested in the welfare of the farmer, and the fact that our farmers are in easy circumstances, augurs good times for all other classes of the community.—*Leavenworth Times*.

LAZY teachers are the exception and not the rule. There is, perhaps, no class of persons who labor more conscientiously and earnestly for the good of their employers, than the teachers of the public schools. The very nature of their business makes them industrious. There is something in the activities of a child's school-life that begets a corresponding activity on the part of the teacher. The fault is not that teachers do not work, but that they do not know how to work. They necessarily experiment, and while their experiments may sometimes result in good, they are often productive of infinite harm.—*Educational Calendar*.

LEIBIG makes the statement that rain-water filtered through field or garden soil does not dissolve out a trace of potash, silicic acid, ammonia, or phosphoric acid. The soil does not give up to the water one particle of the food of plants which it contains. The most continuous rain can not remove from the field, except mechanically, any of the essential constituents of its fertility. The soil not only retains firmly all the food of plants which is actually in it, but its power to preserve all that may be useful to them also extends to withdrawing from rain or other water all the ammonia, potash, phosphoric and silicic acids held in solution.

AN Ohio correspondent says that quails are relied upon in that State for the destruction of potato-bugs, and that where the birds are plenty the fields are kept entirely free from beetles, with no care on the part of the farmers. The quails, in quiet situations, visit the fields in large flocks, and, taking the rows symmetrically by course, clear up every hill, and return the next day for more. The Ohio Legislature passed a law two years ago for the protection of quails, and the result is a large increase in their numbers, very welcome to the farmers, who regard them as one of their most valuable aids in the war against insects.

MEMORY is the secretary that records our experiences, and the best educated man is the man of the largest experience. The brain of an educated man is a work-shop, that of a scholar is a store-house.—*Educational Calendar*.

Home-Made Barometers.

All are familiar with those little wooden toy houses with two doors, out of which the man comes in wet weather, and on his going in, the wife comes out of the other, when it is fair. The principle on which they are made is that catgut in wet weather shrinks, and in dry weather regains its length. A yard or more of common whipcord, with a small plummet attached, suspended against the wall, will indicate the weather by rising before rain and sinking before fair weather. Salt which has been thoroughly dried greatly increases in weight before rain. A pair of scales kept suspended with an iron or brass weight in one end and an equal quantity of dry salt in the other, will infallibly show any change in the atmosphere.

THE local geography of the State, and especially of the county in which pupils live, is of great importance. To facilitate the study, we have published for use in schools a map of each county in the State. Each map contains the location of the school-houses, post-offices, villages, streams, Congressional and municipal townships. These maps should be in every school-room, and in the possession of every pupil in the State. That they may be within the reach of all, we will furnish them by mail, in packages of twenty-five or more, at one cent each, postage paid.—*Educational Calendar*.

HARPER'S WEEKLY has a map of the world, by Ptolemy, that is nearly seventeen hundred years old. It is remarkable for its correctness as far as it goes, and what is wonderful to modern geographers, makes the heads of the Nile the Nyanza lakes that have cost modern explorers so much to discover. And the course of the Congo recently explored by Stanley is given very much as it is to-day. We must revise our ideas and our egotism both a little, for the more we learn the more we find that mankind has known before.—*Champion*.

THE rate of freight on fresh beef sent to England is two cents per pound, exclusive of the cost of ice and attendance. The charge for a live steer is greater than for the carcass, yet the price obtained in England affords a profit. Shipping live animals is considered preferable as they can be slaughtered at favorable opportunities, while dead meat must be sold shortly after its arrival, and is consequently often disposed of at a loss.

A WRITER in the New York Sun says that Mr. Charles Napier, of England, has, by a large number of experiments, established the fact that if a person will confine himself to a farinaceous diet he will have no desire for intoxicating liquors. He has tried the experiment with twenty-seven persons, and considers the fact fully established. It would be well for some of our hard drinkers to test the theory.

THE estimated number of acres sown to fall wheat in this county is 59,358, being the sixth largest acreage in the State. The total acreage, in the State, to fall wheat is 1,243,515; an increase over the seeding of 1876, of 401,210, acres. This at the general average of the past twelve years, would yield 17,509,210 bushels, of which Butler county would produce about one-twentieth, or 831,012 bushels.—*Butler County Gazette*.

MAKE sense out of this: "Lord Palmerston then entered on his head, a white hat upon his feet, large and well polished boots upon his brow, a dark cloud in his hand, his faithful walking-stick in his eye, a menacing glare saying nothing."

PUNCTUATE the following so as to make it true:

Every lady in the land
Hath twenty nails upon each hand;
Five and twenty on hands and feet;
And this is true without deceit.

SCIENCE is a good piece of furniture for a man to have in an upper chamber, provided he has common sense on the ground floor.—*Educational Calendar*.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 15, 1877.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE other day we stated that our friend Capt. B. J. F. Hanna had been appointed Register of the Land Office at Larned, whereupon he postal cards as follows: "Take that back! It's no such thing! I'm not going to Larned. I've *larned* enough, now. I'm a Hayes man, and am going to Hays City." We take the Larned back, but stick to the rest. It is a good appointment, any how.

THE Lawrence *Standard* notices the impromptu remarks made by Major Henry at the dedication exercises of the University the other day, which are sound to the core:

T. C. Henry, the Kansas wheat king, followed Mr. Thacher. He made an appeal for practical education suited to the agricultural interests of the State. Kansas is pre-eminently an agricultural State, and the cultivation of the soil does and will form the occupation of a large portion of her citizens, and such education is needed as will help this class of her people.—*Lawrence Standard*.

State Text-Books.

The free text-book question is now agitating the minds of a great number of teachers and school friends. The *Calendar* says that in nearly three hundred district schools in Kansas the text-books are furnished free for the pupils, and that in this manner from one-half to one-third the usual cost is saved. It estimates also that such a plan would save the school districts of Kansas at least \$44,000 annually.

Here is another idea. In several parts of Europe, the text-books are furnished free for the pupils by the State. In some cases the government may have adopted this method to prevent the induction of dangerous political or religious ideas into the minds of the youth, but the fact that the most liberal cantons of Switzerland have adopted it suggests that there must be other causes. As the necessity for new text-books is felt there, the department of public instruction appoints a competent committee of practical teachers to compile a suitable work. Proof-sheets are then printed and distributed among the teachers for examination and discussion at their monthly meetings; and with due consideration of their suggestions, the work is finally revised and printed. The State becomes sole publisher and proprietor.

The advantages of this method are manifold. It gives the teacher the book he wants. Being, so to say, its editor, he takes an unusual interest in it, and interest is the mother of enthusiasm—the great motor in the school-room. It establishes uniform methods of teaching throughout the State and permits a comparison of the work done. It simplifies and reduces the difficulties of conducting normal institutes. It does away with the numberless intrigues of an army of talkative book agents among school boards and teachers. It saves the people annually thousands of dollars, more perhaps than any other plan.

How would the method work on this side of the ocean? The State is under no obligations to publishers, and a little more centralization, even beyond this text-book question, could but strengthen our educational system.—*J. D. Walters*.

American Bald or Deciduous Cypress.

Experiments have been quietly going forward on the College grounds for several years, with a limited variety of forest trees. Some of these will not endure our dry climate. Others, while proof against drought,

succumb to the combined power of the hateful locust and drought. And, hence the experience of 1874 materially modified all our ideas of what should be planted for forest purposes in Kansas. Nearly all our imported trees, both large and small, (and they were growing here by the thousand,) perished.

As a doubtful experiment, we had at that time growing on our grounds two small clusters of Deciduous Cypress (*Taxodium distichus*), one upon the upland and the other upon bottom ground. Both clusters of these trees were unharmed by the locusts and drought of 1874, while not a Scotch Pine, Norway Spruce nor European Larch survived the season. What is specially encouraging, these trees have made a vigorous growth since that time. By measurement of a section taken from a tree upon the upland, we find that the increase in diameter in the past three years has been two and one-fourth inches, while upon the low ground the tree increased in diameter in the same time full three and one-fourth inches. So that the growth of this tree may be regarded as rapid even on upland. But as might be expected, the tree will grow far more vigorously upon low or bottom lands. Many have supposed, and apparently with good reason, that this tree would not succeed in Kansas soil; but the experience of six or seven years here points in the other direction.

It is well understood that this tree is exceedingly valuable in the South. It will take the place of pine in almost all kinds of work, and is much more durable in exposure, as for example, cypress shingle will last forty years, and for posts will last many years. It would seem desirable to experiment further with this tree, not only here, but in other parts of the State; and as it can be grown from the seed more readily than any other of the coniferae, it should be furnished in large quantities at low rates. Though this tree is not now grown in large quantities by nurserymen, it will be furnished whenever there is a demand for it.—*Prof. Gale*.

Take Care of Your Body. No. 2.

Second, Take care of your lungs. A man's breath is his life, and when a person's lungs are gone, he is pretty much used up all over. Thousands die every year in this country from diseases of the lungs, and when that disease gets a pretty firm hold of one, it rarely lets go. One of the best ways to care for the lungs is to feed them with plenty of good, wholesome air. Especially do all persons who are occupied much of their time within tight walls with low ceilings need to heed this injunction, and it should be emphatically impressed upon all teachers of our common schools. For a teacher to allow forty or fifty pupils to be closely confined in a small room with but little ventilation, five or six hours a day, is absolutely criminal. The seeds of lung disease are there sown, which will yield a harvest of bitter woe in after years. Give the children plenty of pure air, and teach them to inhale it bountifully, but do not give them a current of cold air directly upon them. Sleeping rooms should be carefully ventilated. Persons who are in the open air eight or ten hours a day can live through the night on very poor air, but for ladies all day in doors, teachers, students, merchants, clerks, and others of like occupations to sleep in small rooms with no ventilation is simply suicidal.

As a part of care for the lungs, and closely allied to it, is the third element of care, protection to the body. To expose ourselves to cold and dampness without

suitable protection, in a country subject to such piercing winds and storms and of such a changeable atmosphere as this is, is always dangerous. True, some strong constitutions can endure much exposure for years, but it is always unwise.

Protection to the feet is very important. For a lady to wear a thin pair of hose, covered with a cloth shoe, having a sole one-sixteenth of an inch thick, and then walk the streets in damp, chilly weather, is the height of folly. She ought to expect to die with the consumption without living out half her days. For any one to wear thin shoes or boots, without rubbers, or thick ones with holes in them, in muddy weather, thus allowing the feet to become saturated with cold water, is exceedingly unwise. The feet should be kept warm and dry.

All parts of the body, and especially the chest, should be thoroughly protected from these piercing Kansas winds. You say all persons cannot afford to purchase all the articles necessary for this protection. This is probably true in some cases, and, of course, unfortunately so; but in a great majority of cases in this country, pride costs more than comfort, and in far too many instances, pride prevents comfort. This is not good, sound common sense. How frequently a cold, a hacking cough, or disease of the lungs might be prevented by a little caution in this particular.

Now, if to care of the digestive organs, care of the lungs, and protection from wet and cold be added suitable exercise without overworking either the body or the mind, which many persons very foolishly do under the plea of necessity, also allowing sufficient time for sleep, one should expect, making some deduction for disease which comes to us by inheritance, to live a long and happy life, to have very little occasion for the services of a physician, and to enjoy a comfortable old age. Let me repeat, then, with emphasis, Take care of your body.—*Prof. Platt*.

Climate Makes the Crops.

If the sentiment which heads this article is not exactly an agricultural aphorism, it probably comes as near thereto as any statement of fact which can be made in connection with the great problem of successful crop culture. It is certainly a very humiliating fact, when the great importance of the subject is considered that of all the various factors and conditions which go to make up the complex problem of successful agriculture, that one which alone has the power of tipping the scale toward abundance and profit on the one hand or disaster and starvation on the other, is the one utterly beyond either the control or influence of human agency. It is neither good soil, fertilizers, deep plowing, or thorough culture; it is the little matter of rain-fall and mean temperature which we embrace under the comprehensive term *climate*.

With the weather gods in opposition, the most industrious farmer may seed, top-dress and till the most fertile field in the most thorough manner imaginable and realize less than nothing on capital, time and labor; while with these same weather deities in apposition, the veriest sand-barren may grow a profitable crop with little or no culture whatever. By these broad statements we mean, of course, simply to roughly outline the grave contingencies which climatic influences throw around farm culture at its best, and which give to its pursuit quite as great an element of uncertainty as attend any of the manifold interests of commerce or manufacture. Here in Kansas, and with the experience of the past few years in mind, these truths will call for lit-

tle verification in the minds of readers. The matters of mean, maximum and minimum temperature have little interest for us. Our summers are always warm enough, our winters none too cold, late springs or early autumn frosts cause us little solicitude. But it is upon the solitary item of humidity and rain-fall that we all know and feel hangs our agricultural welfare and prosperity as a State.

It will be long before the older heads among us will forget the stern experiences of 1860, '70 and '74, with their total rain-falls respectively of 13.72, 21.19 and 18.66 inches. On the other hand, there has not, perhaps, in the history of the State, been a year of more general prosperity to the farmer than the one now drawing to a close; and to a generous rain-fall more than to all else must be attributed this result. The total rain-fall at this station for the year 1877, up to December 1st, has been 42.24 inches, 14.62 inches above the average for the past fifteen years, and the heaviest total fall ever measured in this portion of the State, with December yet to hear from. Again, during the growing season of 1877, it is to a liberal rain-fall that we practically stand indebted for deliverance from the impending locust scourge as well as for bountiful harvests. Whatever other agencies may have accomplished in the final solution of the grasshopper question, the cold, wet spring gave the matter its quietus. The rain-fall of the growing months of April, May and June of 1877 was 18.74 inches. This, when compared with the rain deposit for the same months in 1860, '70 and '74, tells the whole story. Thus: 1860, 3.94; 1870, 1.29; 1874, 8.69; 1877, 18.74.

In view of these facts, we may feel warranted in stating another self-evident proposition: that climate not only makes the crops, but it determines everywhere the line which separates abundance and famine, fertile continents and scorching deserts. There is not a great desert, so called, upon the face of the globe whose existence cannot be primarily traced to a scanty rain-fall—the cause of its barrenness and not, as many imagine, its effect. Somewhere surrounding its borders will be found huge mountain ranges which seize upon the prevailing winds as they pass over them, straining from them every drop of moisture, and passing them over to add to the desolation and barrenness of the desert beyond. The trouble is purely of a physical nature, for with the mountain ranges leveled the desert would shortly cease to exist. We might exemplify all this by reference to each of the earth's great deserts, but the reader can take down his atlas and prove the proposition to his own satisfaction.

And, finally, all this leads us to a remark applicable a little nearer home. It is just now the pleasant hypothesis of the western American public that the "Great American Desert" must be remanded to a myth of the dark ages—a pure fiction of the imagination of some bilious and hypochondriac early explorer. On the other hand, we venture to assert that with the meteorological history of the West in mind, no man can doubt that this same Great American Desert once existed as an actual verity, and was traversed as such by these same early pioneers. We know that even within the brief period of civilized records, the rain-fall of the western interior has been steadily on the increase, not perhaps so much in total quantity as in the uniformity of its distribution throughout the year, especially during the growing season. We know that this result is in some measure the work of human agency, of prairie fires checked, of lands broken, of sections planted to forest and crops; and we know that with the steady increase of these conditions the great change is steadily growing. But, on the other hand, there is another force which must be borne in mind. We know the great and blighting influence of the range of the Rocky Mountains upon the plains of its eastern slope, from the winds which pass over it robbed of all moisture; and we must remember that the line which marks the extent of this influence is not a stationary barrier, but a shifting border line. Hence, it is very easily imaginable that a return of meteorological conditions once existing would give us back again the American Desert in all its glory. We have no reason to look for a return of such conditions; in fact, all agencies now appear arraigned against them. But we gain nothing by shutting our eyes to the truth of the matter, or by refusing to read the lessons which it teaches us.—*Prof. Kedzie*.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 15, 1877.

If you like this paper, subscribe for it.

There is every prospect of a full attendance next term.

The next term will begin on Thursday, January 3d, 1878, at 9 A. M.

Four copies of the INDUSTRIALIST will be sent to any person gratis.

Two new students have entered this week, getting a good ready for next term.

We have had regular spring weather this week, and find ourselves wondering why asparagus and lettuce are not in market.

We will be glad to send the INDUSTRIALIST to any teacher in Kansas for three months without charge upon application to that effect.

School district boards about to issue bonds will find it to their interest to note the advertisement in this number calling for bonds.

Parents desiring to send their children abroad for an education would do well to drop us a card asking for a catalogue of the Agricultural College.

The Board of Regents stands adjourned to meet next Tuesday evening, seven o'clock, at the Adams House. Take due notice and govern yourselves accordingly!

The students have organized a Drill Club for the practice of Parliamentary Law, which will hold its regular meetings on Thursday evenings. The meetings thus far have been both interesting and profitable.

Any industrious young man who has \$50 and grit should be able to pay his way by work through the four years of our College course, and win for himself that kind of a sensible education which will enable him to earn a living upon graduation. When the State thus places a thorough and practical knowledge of the sciences within the reach of every determined boy, it has about solved the problem of an education for the masses.

The literary studies for the next term, opening Thursday, January 3d, 1878, will be as follows:

First Year.—English Structure, Advanced Arithmetic and Book-keeping, U. S. History, Industrial Drawing.

Second Year.—Practical Agriculture, Physics, Industrial Drawing, Rhetoric, English Literature.

Third Year.—Practical Horticulture, Landscape Gardening, Organic and Analytical Chemistry, Household Chemistry, Practical Surveying.

Fourth Year.—Zoology, Agricultural Chemistry, Meteorology, Logic, Physical Geography.

Friday, December 7th, the Alpha Beta Society called to order by the President. The question regarding the opening of theological seminaries and law schools to the ladies was discussed and decided in the negative. Speakers on the negative used the words of "Paul the Apostle" to substantiate their arguments. Debate was followed by a fine quartette, "The Sunbeams are Glancing." Music is becoming one of the most pleasant exercises of our Society; it is furnished by two committees which alternate with each other. Miss E. Glossop favored us with a well-prepared essay on the uses of the English language. Question for discussion next week: "Resolved, That poverty tends to develop the character better than riches." Affirmative, H. F. Coe and C. O. Smith; negative, C. J. Reed and Miss Glossop. S. H. W.

The November examinations place the following students in the first rank, their averages of all recitations during the month being ninety-five or over. Of these, fourteen graded 95, five 96, five 97, one 98 and one 99; the names are published alphabetically and not in grade order: Bernhard Anderson, of Dickinson county; James A. Bell, of Johnson; Arthur T. Blain, Riley; Estella M. Bouston, Greenwood; Jennie A. Coe, Missouri; Albert F. Dickson, Johnson; James B. Dickson, Johnson; John Eckman, Osborne; Wilmer K. Eckman, Osborne; Ellen Fletcher, Riley; Albert N. Godfrey, Greenwood; Jasper G. Cowell, Clay; George Goodwin, Riley; Dora Kinsey, Shawnee; Mattie E. Mails, Pottawatomie; John Mann, Rice; George L. Platt, Riley; Corwin J. Reed, Pottawatomie; Lewis A. Salter, Montgomery; Tully Scott, Mitchell; Wm. H. Sikes, Pottawatomie; Clement O. Smith, Lyon; Amos E. Wilson, Dickinson; Nena M. Wilson, Dickinson; John H. Winne, Riley; Clarence E. Wood, Pottawatomie.

The Websters met on Saturday evening as usual. Mr. A. Beacham was elected and initiated. The debate on the question, "Resolved, That every man is the architect of his own fortune," was quite animated, and resulted in a decision in favor of the negative. Extemporaneous speaking was very interesting. Mr. Cox read a humorous selection, and the gentleman appointed for declamation

being absent, the Society passed to the order of new business. A committee being present from the Alpha Beta Society for the purpose of making arrangements for some entertainment at the close of the term, a committee of Websters was appointed to confer with them. While the committees were in conference, Mr. Harvey was granted a withdrawal card, and his resignation as Critic and Librarian was accepted. Mr. Hickey was elected as Librarian and Mr. Wood as Critic. The joint committee then reported in favor of having a social on Monday evening, Dec. 17th. The report was accepted and a committee of arrangements appointed. Question for debate at next meeting: "Resolved, That the United States should not encourage Chinese immigration." REPORTER.

TERM EXAMINATIONS.

The final examinations of the present term will be held on next Monday and Tuesday as follows:

MONDAY.

8:40 to 10:20.—Prof. Ward, Rhetoric; Prof. Kedzie, Chemistry; Prof. Shelton, Advanced Practical Agriculture; Prof. Platt, Drill in English; Capt. Todd, Carpentry; Miss Steele, Instrumental Music.

10:20 to 12.—President Anderson, Parliamentary Law; Prof. Shelton, Physiology; J. D. Walters, Industrial Drawing; Capt. Todd, Carpentry; A. A. Stewart, Printing; Miss Steele, Instrumental Music.

2 P. M. to 3:40 P. M.—Prof. Ward, Geometry; J. D. Walters, Industrial Drawing; Capt. Todd, Carpentry; A. A. Stewart, Printing; Mrs. Cripps, Sewing; Miss Steele, Instrumental Music.

TUESDAY.

8:40 to 10:20.—Prof. Ward, Algebra; Prof. Kedzie, Geology; Prof. Platt, Advanced Arithmetic; J. D. Walters, Industrial Drawing; Capt. Todd, Carpentry; A. A. Stewart, Printing; W. C. Stewart, Telegraphy; Mrs. Cripps, Sewing; Miss Steele, Instrumental Music.

In addition to the above, the following studies have been completed during the term; but as the classes were fully examined upon the completion of the several studies, no further examination will be made: President Anderson, Political Economy; Prof. Ward, Advanced Algebra; Prof. Kedzie, Mineralogy; Prof. Shelton, Farm Economy; Prof. Gale, Botany; Mrs. Cripps, Special Hygiene.

THE TELEPHONE AGAIN.

There is much more in the telephone than, after the first trials, we were inclined to believe. Last Wednesday evening Prof. Kedzie placed instruments at six different offices on the College telegraph line, where, at eight o'clock, parties of ladies and gentlemen, varying from four to fifteen each, were gathered. Mr. Pillsbury's office is at the town end of the line; from it Mr. Wilder's is two squares distant; Mr. Stewart's is a thousand feet from the latter; Prof. Kedzie's a thousand feet from "S"; our office is more than a mile from "K"; and Prof. Platt's is half a mile beyond. The terminal telephones were separated by fully two and a half miles of wire. Music was furnished by the different parties. At one office was an organ, at others pianos, at another a cornet and harmonica, at another a violin. Then, too, from one office would come a solo, from another a duette, and from another a quartette or chorus. To say that the test was a success, would be putting it mildly, and merely to say that the entertainment was unique would be as flat as bilge-water. The notes came with a weird clearness and softness that suggested the supernatural, and the least variation in the harmony was more quickly noticed at distant stations than in the room with the singers. While a cornet solo was coming over a mile and a half of wire, we put a telephone within six inches of the ear of a snoozing cat, and would give five dollars for a photograph of the startled visage of the feline at that time. With bloody astonishment in his eye, fierce battle in the curvature of his spine, and disgust at that sort of music snapping from every hair of a ramrod tail, he apologetically but emphatically declined any more telephone "in his'n."

A surprising experiment was the singing of a duette by persons two miles apart, each having one telephone at his ear and another at his mouth. This was followed by a still more remarkable quartette, each singer being at a different office from the others and some of them two and a half miles apart. While the time was not absolutely perfect, it was much better than that kept by many choirs. Between pieces came conversations innumerable and "all along the line." Each voice could be recognized, and by paying special attention to a given couple, it was easy to follow their questions and answers, though half dozen others were singing, laughing or talking at the same time, just as an operator will read one of a dozen telegraph instruments working in the same room.

Commend us to a telephone party over all others. You don't have to dress up, set up or keep your heels off the table. You needn't talk unless you wish, look interested when you are bored, or laugh

when you have a headache. If your wife wishes to smoke she can do it, and if you wish to read the papers you can do it. In the matter of "handing around" coffee and oysters, the telephone has disadvantages, but there is nothing perfect in this world except the INDUSTRIALIST, which can be had for the insignificant sum of seventy-five cents a year.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is of its own interest and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is

one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 11:15 A. M.
Going West..... 5:05 P. M.

FREIGHT ARRIVES.

Going East..... 5:05 P. M., and 3:50 A. M.
Going West..... 6:30 A. M., and 8:05 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

AMOS E. WILSON, President.

MISS EMMA COOK, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

IRVING TODD, President.

A. N. GODFREY, Secretary.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending December 12th, 1877. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.
	Max.	Min.	Mean.	
Thursday.....	645°	16°	34°.25	28.94
Friday.....	749	17	37	28.98
Saturday.....	850	22	37.25	29.12
Sunday.....	956	25	45.50	28.82
Monday.....	1061	27	47.25	28.86
Tuesday.....	1167	36	55	28.85
Wednesday.....	1260	24	54.50	28.85

Average temperature for the week, 44°.39.
Range of temperature for the week, 51°.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 10 A. M.; Mrs. A. D. Goodwin, Sup't.

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THE INDUSTRIALIST.

SATURDAY, DECEMBER 15, 1877.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Junction Union*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

It's work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Neosho Falls Post*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advan-

tages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

The Educational Weekly.—The union of the *School Bulletin* and *N. W. Journal of Education*, Wisconsin; the *Michigan Teacher*, Michigan; the *Illinois Schoolmaster*, Illinois; the *Nebraska Teacher*, Nebraska; *The School*, Michigan; *Home and School*, Kentucky; *The School Reporter*, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

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ANNOUNCEMENT!

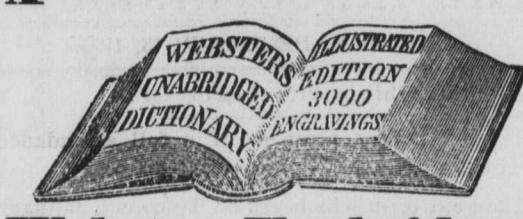
In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises" but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly **THE PRACTICAL TEACHER**. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, **THE PRACTICAL TEACHER**, 170 Madison St., Chicago.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, DECEMBER 22, 1877.

No. 36.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Ten cents per month, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13= 1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73= 1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51=97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

About Storms.

The National Academy of Sciences held its last meeting in New York City, convening on the 23d ult. Prof. Elias Loomis for years has made the science of the weather his specialty, and contributed various papers of general interest. At this late meeting he read an essay on the "Origin of Storms," which is not only of interest, but satisfactory in its solution of storm phenomena. The data upon which he proceeds in his study of the subject he derives mainly from our Signal Service, which is becoming efficiently inaugurated. Already it has contributed largely, not only to scientific knowledge, but to material interests, as various occupations and shipping. We know the reader will be interested in reading Prof. Loomis' statements as we find them reported in the New York Tribune of the 25th of October:

"They generally, he finds, begin in the neighborhood of the Rocky Mountains. A few can be traced to the Pacific Ocean, near the northern boundary of the United States, but no example is found of any considerable storm arising on the Pacific coast south of Oregon. A large proportion of our great storms originate and are developed wholly within our territory. The following is the usual process in the birth of a storm. To begin with, there is generally an area of several hundred miles diameter, throughout which the barometer stands at the mean. On opposite sides of this area—generally east and west—at a distance of perhaps 1,000 miles apart, are areas of high barometer. The rise of the mercury in these side areas is usually one-quarter of an inch or more above the mean; sometimes it is a full inch above. The atmosphere in these two side areas begins to move toward the central area. The currents thus established are deflected toward the right by the earth's rotation; and a diminished pressure results over the central area. With continued diminution of pressure at the center, the inflow increases and comes from all sides. The area of low pressure assumes an oval form, but if the winds are very violent, it may be more nearly circular. With rotation, a centrifugal force is developed, which increases the depression. An upward movement of the atmosphere within the depression area is continuous; otherwise the inflow would restore the equilibrium. This upward movement carries large amounts of aqueous vapor which, when cooled at a level, condenses as rain. The heat liberated by condensation increases the refraction of the area; and thus rain increases the force of the storm, though never originating it. The latter conclusion may also be deduced from the fact that the inflow begins before there is any precipitation of rain.

"As to the progress of the storm, the following general observations may be made. The west wind, which is characteristic of this part of the world, carries along the storm area. It may, however, meet interruptions, such as a local storm. In that case the low area, thus arrested in its forward progress, will be the seat of increasing force during the interruption, and the storm for a few days afterwards is likely to show greater violence. The disturbance which constitutes the storm is mainly within the lower currents of the atmosphere, the upper currents being comparatively unaffected. The pressure of the general wind from the west tends to fill up the rarefied area on that side, both above and below. On the east side only the lower or surface wind constitutes an inflow, while the upper portion of the storm is moving to the east under pressure of the west wind. It follows that the upward motion within the storm area takes place chiefly on the east side of the area, the motion being so rapid that the inflow is insufficient to restore the equilibrium. A further result of this process is that the depression at the center is constantly transferred toward the east.

"But if there should be a great precipitation of vapor on the west side of the storm area, the center may be prevented from going eastward; may be held stationary or may be quite diverted toward the west. Sev-

eral remarkable instances of this exceptional kind were cited. In one of the most striking of these cases—December 30, 1874, to January 18, 1875—the storm center oscillated within a range of about 1,000 miles from west to east. During most of the time the winds on the west of the area blew with the force of hurricanes, accompanied by snow, sleet, and low temperature. The explanation offered in that instance by Prof. Loomis, is that the extensive precipitation on the west side of the low center was probably a cause of the slow progress, and was itself due to a cold wind from over the continent, underflowing a warm current arising from near the Gulf stream."

A Point to Consider.

We occasionally see some indications of wisdom among those who come to Kansas in search of homes. A central thought with most of those who thus come West on a tour of observation and inspection is to obtain low-priced lands. These are found of almost endless extent in western Kansas. Thither all the advertisements of the railroad companies direct—thither are they interested. The lands are found cheap, level, streamless and unoccupied. If one wants low-price land, there they can have it—far from market, without school-houses, without churches, court-houses or anything of the kind. For the first five years everything demands expenditure. There are some who make a distinction between low-priced lands and cheap lands. The difference of only a dollar per acre for an 80 or 160-acre farm is nothing compared with the advantages of a partially settled community, where streams exist with bridges built and paid for, 50 or 100 neat school-houses dotting the country, court-house and jail established, churches built, society organized—crystallized, good markets, mills, railway facilities, public libraries, well-to-do neighbors able to assist in cases of emergency—all these and many more advantages cannot be offset by a matter of one or two dollars per acre for a farm. But the truth is, there have been and still are opportunities of getting lands in such communities here, and in fact all over eastern Kansas, at prices fully as low as the trackless plains of the West are offered at. Many who have been West and examined for themselves, work their way back to the more thickly settled counties, where in securing land they also secure a home. To struggle and toil for four or five years in an entirely new locality, and go through the exhausting sweat of heavy taxation for the initial improvements, only to find themselves at the expiration of that period just where they might have been at the start, furnishes no very alluring inducements. It is worth while to look on all sides of the subject when taking a step so important as that of securing a home for the remainder of one's life.—Exchange.

Wheat Growing in Our State.

Annual official statistics prove that Kansas is one of the best wheat-growing States in the Union, and the increased acreage from year to year shows that our farmers are finding it out. In 1876 there were 857,125 acres planted to wheat, and this fall the Secretary of the State Board of Agriculture estimates the amount sown at 1,243,515 acres, showing an increase of 386,390 acres. We have good reason for believing Mr. Gray's estimate of acreage sown this fall to be below rather than above the actual amount. Probably the increase in acreage this year is nearer 500,000 than 386,390 acres. From the 857,125 acres sown in the fall of 1876, there were harvested last summer 7,14,171 bushels of wheat, or only 11.33 bushels per acre, while the year before the average was 15.47 bushels per acre. If we multiply the acreage of this fall, as given by Mr. Gray, by the average of the crop just harvested, it will show that the production of wheat in Kansas in 1878 will be 13,803,016 bushels. If the yield should average as well as it did in 1876, of which there is good prospect, that is to say about 15½ bushels per acre, the production in 1878

will reach the enormous aggregate of nineteen millions two hundred and sixty-four thousand four hundred and eighty-five bushels of wheat! It is hardly possible that our production next year can fall as low as say 12 bushels per acre, and is very likely, judging from present prospects, to exceed 15 bushels per acre. If the season is favorable, how many States in the Union will produce more wheat in 1878 than Kansas? Not more than two at the outside,—Iowa and Minnesota,—and most probably Iowa is the only one that will lead us.—*Paola Spirit*.

STICK to short Saxon words. Do not say a "residence" when you mean a house, or ask "Where do you reside at present?" when you mean "Where do you live now?" Do not ransack your memory for long affectations when short words will serve your purpose. Say "I have been looking for you," and not "I have been anticipating your arrival." Don't say establishment instead of store or shop, nor speak of purchasing instead of buying, nor of disposing of instead of selling, nor of perusing instead of reading, nor of procuring instead of getting, nor of requesting instead of asking, nor of intending instead of meaning, nor of attempting instead of trying, nor of performing instead of doing, nor of remarking instead of saying. These longer Latin words have their proper function, of course, and are to be used sometimes, but they should not be lugged in for the sake of a display of elegant English. Avoid hifalutin. Study the style of the Old Testament for a model, rather than that of the dime novel.—*Exchange*.

To keep roots sound and plump, Mr. Benjamin P. Ware, of Marblehead, a successful gardener, cuts off the fine roots close to the body, and pares away the crown of the turnip or beet sufficiently to destroy all buds or rudiments of buds. The thus doctored roots are then placed in barrels of sand or covered with earth in the cellar to prevent wilting. Removing the buds and rootlets prevents that corkiness so common with these roots when kept till late in the winter, which is caused by the support of sprouts and rootlets using up much of the more tender and edible substance of the roots. Turnips and beets thus treated are as nice for the table in late winter or early spring as when first harvested.—*Scientific Farmer*.

THE United States grasshopper commission, of which our Prof. Riley is president, is to meet at Washington in January. An additional appropriation for the aid of the commission is to be solicited. As long as grasshoppers and potato-bugs destroy the crops of western farmers, reliable information concerning these pests, their habits, and the methods of destroying them will be worth all the money it costs.—*St. Louis Journal*.

MR. BRADLEY, a writer on gardening and husbandry, informs us that a pair of sparrows once carried to their nest, on an average, forty caterpillars every hour during the day. Hence, nearly five hundred of these destructive insects were disposed of in twelve hours by two little birds. Ten pairs of sparrows would therefore destroy thirty thousand caterpillars per week—enough to ruin any garden or fruit orchard in the land.—*Exchange*.

DURING 1876 \$700,000,000 were spent in Great Britain for intoxicating liquors, and \$600,000,000 in the United States. The income of the former country for that year was about \$400,000,000, and of this amount \$170,000,000 came from custom duties on wine and spirits, and excise duties on spirits, malt and licenses.

THE amount of corn raised in this county this year is 2,416,140 bushels. The number of acres sown in wheat last year was 1,653; this fall there has been 5,265 acres put in wheat, an increase of 3,812 acres. The total product of corn this year in the State is 103,565,645.—*Lyndon Times*.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 22, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

EXCHANGES will confer a favor by announcing that:

The next term of the Agricultural College will begin Thursday, January 3d, 1878.

Kansas and Paris.

Owing to the rush of a closing term, we have been prevented from reading the exchanges, and do not know what names have been suggested by the press for the position of commissioner from Kansas to the Paris Exposition. That office ought not to be a sinecure; and Kansas could not make a better investment of \$50,000 than by showing itself to the world at Paris as it did to the world at Philadelphia. The resultant stream of immigration, capital and manufacturing industries would be a thousand-fold greater than the cost. The appointee should be selected with direct reference to the advertisement and development of Kansas. In view of their personal ability, but especially because of the experience gained in that sort of work by their service at Philadelphia, two better men cannot be named than Col. John A. Martin, of Atchison, and Gov. George A. Crawford, of Fort Scott. We happen to know something of the drill through which these gentlemen were put, and of the valuable and thorough training for precisely such a position which they received by the hardest kind of successful work. It isn't likely that Col. Martin would exchange the *Champion* for any crown in Europe, but there is no reason why Gov. Crawford's tact, diligence and eloquence should not serve Kansas in the Commission at Paris as our two commissioners splendidly served the State at Philadelphia. No two men could have a brighter glory than that which they won for themselves.

And there is another gentleman who in the same way obtained an invaluable experience for another and equally valuable work, namely, Alfred Gray. In his field he has not an equal in the United States. If ever there were an imperative necessity that any man should be in two places at the same time, it is that Gray should be in both Kansas and Paris; but of the two, Paris.

It doesn't make any difference whether Kansas can get two of the commissioners or not, it has got to have them; and to our notion either Martin or Crawford should be one and Alfred Gray the other. The matter of speaking French is of but little moment; the world speaks English nowadays, and there will be more of it than of French at the Paris Exposition.

Cramming.

One appeal after another for a more rational and practical education is howled down by the petrified infallibilities of ancient school-mastery with the cry, "cramming." If the pupils are kept at spelling, arithmetic, geography and grammar—the old recognized curriculum—it is supposed by many that the evil will be avoided. The principles of natural sciences, drawing and book-keeping, however, could not be taught in the common school without cramming. This is the prevailing sentiment.

Yet, what is it but cramming if we compel pupils to spell fifteen or twenty thousand words without heeding the laws of orthography, when there is but little chance that one pupil out of fifty will have occasion, in all his after life, to write above four thousand of them, and those the most common? What is it but cramming if

we compel pupils to memorize, and that, too, with little reference to generalization, from twenty to forty thousand facts in geography, when it is well known that not more than one-tenth of these facts will be remembered, or would be of any use if they were? What is it but cramming if we compel the pupils to memorize whole grammars and repeat them verbatim, while their discriminating powers are not equal to the comprehension of one-quarter of what they repeat? Stuffing in its worst form is generally found where the fewest studies are pursued. Enough time is often wasted there in spelling words,—abracadabras to the pupils as to significance,—to give them, if their energies were properly directed, a rational start in book-keeping or industrial drawing.

As we must supply the body with a certain amount of food before there can be any growth, so we must supply the mind with facts and expressions; and there is no cramming in the case so long as the supply does not exceed the assimilation. Variety of food does not necessarily imply cramming, but rather increased digestion and growth. For similar reasons, variety of studies implies not cramming, but rather increase of mental assimilation. Each study has its characteristics, both in matter and method, which exert a peculiar influence upon the mind of the learner; and to keep up his interest, it is far better for him to be exercised with various things. Cramming is not the introduction of more studies into the curriculum of our public schools,—studies of a practical character, perhaps,—but rather an attempt to exhaust the few branches taught, imitating higher institutions of learning. Instruction can be thorough without being exhaustive.

The attempt to fit every pupil for a university education, and, ultimately, for a profession leads more than anything else to cramming. If our schools would aim to give each pupil an education which would make a choice of a profession possible, and place an industrial occupation within a certain reach, then industrial drawing, the principles of natural sciences, and perhaps book-keeping would have to form an essential part of the curriculum; but just by this very increase of studies, cramming would be in a great part avoided.—*J. D. Walters.*

The State Horticultural Society at Parsons.

The attendance of delegates from local societies and of individual members was large, the various sections of the State being well represented, even the West sending us efficient workers as far out as Rice and Ellis counties. The growing importance of western Kansas in a horticultural point of view can be scarcely realized. The vastness of the region to be occupied, the gradual change of climate as we move westward, the importance of forest culture in this vast region, the difficulties that meet the planter at every step, and the demand for a permanent and prosperous population for this part of the State, all conspire to throw around the pursuits of horticulture in western Kansas an importance which very many are slow to accept.

One of the most promising features connected with the settlement of this part of the State is found in the fact that its leading citizens have not only the inclination, but the means and energy necessary to begin the work of tree and fruit culture. The wants and capacities of this region were earnestly presented by Hon. Dr. Bohrer, of Rice county.

The exhibition of fruit upon the tables was indeed very fine. The collection from Douglas county was carefully made, and was much admired by all. A collection of

ninety-six varieties of apples was forwarded to the Society from Ohio, but reached Parsons too late for the occasion. The collection, however, was turned over to the South-Eastern Horticultural Society, which holds its annual meeting at Humboldt, on the 9th and 10th of January next. As this fruit will then be exhibited in contrast with our own, it will add much to the interest of that occasion. We trust that south-eastern Kansas will be represented at that meeting.

The addresses, reports of standing committees, and essays covered a wide range of subjects, and yet all came within the sphere of the Society's work. The range of practical education which the horticulturist may legitimately demand was discussed at length. A carefully prepared report upon the vegetable garden called forth an animated discussion, both upon the mode of overcoming the difficulties experienced in some degree by all, and also how to protect ourselves against the insect pests of the garden. The value of the garden to the farmer and his family was very earnestly presented. We were especially glad to hear the idea repudiated that the wife and mother should be held responsible for the vegetable garden. And some persons, at least, went home from that discussion with the determination that henceforth they would have better gardens. The mode of handling fruit occupied some time, and among the points made in the discussion may be named these: that fruit of all kinds should be sorted with great care; fruit should be uniform through each package, that is, never select the best fruit for the top of the package; and establish a reputation for honest dealing. While a few favored sending peaches to market in baskets, the majority favored the open crate on account of convenience in handling and safety in transit.

As the south part of the State has had a good peach crop the past season, all were ready to talk of peaches, and especially of the new early peaches. New early peaches seem likely to be something of a bore. The excitement is not unlike that of the new potatoes a few years since. It seems now quite probable that about every other man and about every other one of all his neighbors will soon have a new early peach, and some phantom visions of coming good fortune. The most experienced planters all urged caution in adopting and disseminating any new peaches that may be thrown upon the market.

The last evening was occupied by the reading of several papers on floriculture; and while all were interesting and profitable, the one read by Mr. Robson, of Dickinson county, upon "Our Native Flora," was especially worthy of note in eloquently calling attention to the neglected but beautiful treasures of our own forests and prairies.—*Prof. Gale.*

Parliamentary Law.

An American goes into a mass meeting or "society" as naturally as a duck takes to water. No other nation is half so familiar with the rules governing deliberative assemblies, or so quickly comprehends the object of a given motion; and this is true of all classes. A case in point occurred at the Centennial, where the several groups of judges selected their own officers. In one group, composed of three Americans and five distinguished gentlemen from England, France, Austria, Belgium and Sweden, it was moved that a temporary chairman be chosen, and the statement made that this motion would be followed by another for the appointment of a committee on permanent organization. To the Americans this course was simple and sensible. These eight gentlemen had never laid eyes on each other before, and, in view of the interests in-

volved, the probabilities were that such a committee would make a safer selection than that suggested on individual motions. But to the European judges the proposition had an exceedingly suspicious look; they didn't see the point; and were far from certain that a whole car load of wooden nutmegs might not be hidden under a "temporary" organization. The motion was lost.

The masses of the people under monarchical governments have no use for parliamentary rules, because they rarely have any "deliberations" to make; whereas, under a republican government every man is a sovereign, and may at any time be called into consultation with his fellow-sovereigns. It is for this reason that a knowledge of the rules of order is of greater practical value to us than to other nations; and, upon the same principle, it is clear that the masses of our people, for their own protection and advantage, should become thoroughly familiar with the details of parliamentary law. Farmers, who compose the great majority of the population, oftentimes find themselves placed at a disadvantage in a convention, because of the superior tactics of some professional man who, by a few bland motions, puts the question in such a position that the body cannot take the action which a large majority clearly desires that it shall take. Whereupon, they alternately admire and abuse the "education" of their opponent, though, in actual fact, his ability is not so much the result of a general education superior to theirs as it is the result of a greater knowledge of one particular subject—that of parliamentary law.

No little of the diffidence of "new members" in legislatures arises solely from a lack of this specific knowledge. In the discussion of measures, in the forcible presentation of strong arguments, and in pluck, they may be the peers of other members; but when it comes to piling up or clearing away motions, they feel like a boy on the ice without skates as compared with the skillful skater—the least jostle takes them off their feet.

A portion of the time which is spent in the schools upon the classics or some other fancy study, could be profitably put upon parliamentary law. And the granges, debating clubs, and various societies would find that an occasional evening spent in a drill in parliamentary practice would have a novel interest, would lead to a study of the powers and limitations of motions, and would be of great profit. Any citizen is liable to be called to the chair at any time, or to engineer some measure; and the sooner the masses become as expert in the use of motions as are the few, the sooner will majorities, whatever may be their vocations, be able to free themselves from the rule of strategic minorities.

It is fortunate that an admirable manual on this subject has recently been published—Robert's Rules of Order*—which is bound to supersede both Cushing's and Jefferson's manuals, because of its greater simplicity, better classification of motions, and later usages. Its "table of rules" is invaluable to a presiding officer, since it shows at a single glance the following seven things concerning each of thirty-four motions: Whether it is debatable, whether it opens the main question to debate, whether it can be amended, whether it can be reconsidered, whether it requires a two-thirds vote, whether it requires a "second," and whether it is in order when another member has the floor. The system of "cross references," together with the index, cannot be improved upon. We have used it as a text-book with great satisfaction; and while it does not present all details as fully as do some other manuals, yet its statement of principles and general arrangement are vastly superior. As a pocket manual it is without an equal, and we heartily recommend it.

* Pocket Manual of Rules of Order for Deliberative Assemblies. PART I: A compendium of Parliamentary Law, based upon the rules and practice of Congress. PART II: A simple explanation of the methods of organizing and conducting the business of societies, conventions, and other deliberative assemblies. By Major Henry M. Robert, Corps of Engineers, U. S. A. S. C. Griggs & Co., Chicago. Price, 75 cents, by mail.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 22, 1877.

We will send four numbers of the *INDUSTRIALIST* without charge to any person desiring it.

After you have read this paper, hand it to the next most sensible person of your acquaintance.

The past term has been both pleasant and profitable, good work having been done in all the classes.

Another new student, as we go to press, getting ready for next term; this time from Shawnee county.

New students desiring information respecting boarding, or rooms for "baching," will please address A. A. Stewart.

We will be happy to send the *INDUSTRIALIST* free to any teacher in Kansas for two months. Send in your address immediately.

The term examinations were finished last Tuesday, and the grades will be worked up and forwarded as usual as soon as can be done.

Noble L. Prentis has been engaged by the ladies of the Presbyterian Church of Manhattan to deliver his racy lecture on Europe about the middle of January. It is one of the best treats extant.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Prof. Kedzie is booked for a lecture on the telephone at a dozen different points during vacation, and has started on his tour. W. C. Stewart accompanies him to run the "other" end of the telephone line.

All of the Regents except Col. Hallowell made full and satisfactory experiments with the telephone, talking over two miles of wire. They were completely gotten away with, as is every one who tries the instrument.

Say, why can't the namers of new machines christen them with some word less than a mile long? Any body can have our share of the first half mile of telephone; "phone" is all we want, either as a noun or verb.

So far as applications for catalogues and inquiries respecting details form a ground for an opinion, there is a better prospect for a large attendance of students during the coming term than ever before at the same time of the year.

The calendar of the Agricultural College for 1878 will be as follows: The Spring Term will open Thursday, January 3d, and close Wednesday, May 22d. The Fall Term will begin Wednesday, September 4th, and close Wednesday, December 20th.

Persons in Manhattan or the vicinity who desire boarders will please notify A. A. Stewart of the fact, giving the number they can take and prices. Those who have rooms to rent will oblige us by doing likewise, stating number and size of rooms with price per month.

W. C. Stewart, Superintendent of our Telegraph Department, has been appointed agent for the introduction of the telephone in the States of Kansas and Nebraska. He will put up lines, furnish telephones, and give instruction in their use whenever desired. Persons desiring information can address him at Manhattan.

The Board of Regents met last Wednesday at 2 P. M., all the members present, and remained in session until Thursday evening, transacting a large amount of business. Hon. T. C. Henry, of Abilene, Dickinson county, took the oath of office, having been appointed to the regency vacated by the resignation of Lieut. Gov. Salter. Regent Lawrence was elected President of the Board, in place of Gov. Salter, and Regent Wood Vice-President. The plans for the new building, submitted by E. T. Carr, architect, were accepted, and the Executive Committee ordered to advertise for proposals. In addition to purchasing school district bonds at the highest market rate, the Loan Commissioner was authorized to invest in safe county or township building or bridge bonds. After a very pleasant session, the Board adjourned to meet Tuesday, February 12th, 1878, 7 P. M.

If the oldest inhabitant ever experienced in December such weather as we have had for more than a week, he has hitherto kept his mouth most remarkably shut there aent. The blue-grass is coming up, the clover spreading itself, the elm and maple trees are pumping up sap, the peach buds

are far advanced, and the lilacs are almost out. The worst foiled bird in the business greeted us one morning with a hesitant chirp, as if it thought spring had come, but couldn't account for the numerous absences of the other birds. The evergreens are in no doubt about the weather whatever, but are opening out their spring goods for a heavy trade. The vegetable kingdom evidently supposes this to be the month of April, and either its calendar or ours is out of kilter. Should this unseasonable weather last much longer, and be suddenly followed by the usual Christmas zeroes, no little damage will result. If Prof. Tice is at the bottom of this thing, he ought to be suppressed by a special act of Congress.

The Websters met Saturday evening, as usual. Some of the speakers being absent, the debate was postponed. Extemporaneous speaking ensued with much interest, all the members and several visitors taking part. The question, "Resolved, That the United States should not encourage Chinese immigration," was then discussed by Messrs. Cox, Todd and Beacham on the affirmative, and Messrs. Salter, Godfrey and Scott on the negative, the decision being given in favor of the negative. Mr. Patton read a very interesting essay entitled "Happiness."

As about one-half of the members will remain here during vacation, it was decided not to discontinue the regular meetings of the Society. The following was selected as the next question for debate: "Resolved, That a man is justifiable in disobeying the laws of his country, when he believes them to be morally wrong." Affirmative, Messrs. Dickson, Godfrey and Beacham; negative, Messrs. Hickey, Todd and Wood. REPORTER.

A very pleasant entertainment was given in the College chapel last Monday evening by Prof. Platt's singing class and the two literary societies. That part of the performance with which the singers had to do, consisted of choruses, quartettes, etc., each being rendered in a very creditable manner. The "Combsiana" quartette and the "Pirate's Glee" pleased our fancy more than anything else, but all were good.

After the singing, the seats were removed, and the company of young folks was soon scattered here and there, playing games, chatting, and having a good time generally. One could not resist the conviction, as he watched the students in their mirth and gaiety, that only those who had done a good term's work would take so much pleasure and be so light-hearted and free as these persons. The committees appointed by the two societies busied themselves in providing for the happiness of all, even to furnishing candy, apples and pop-corn in great abundance. The refreshments were the last thing on the programme, and the party broke up shortly after these were served. Each one went home thinking still better of every other one, and cherishing a kindly remembrance of the past term and the happy manner in which it closed.

Among the pleasant things which "Vilas," the regular correspondent of the *Topeka Commonwealth*, says of Manhattan are the following:

The glory of Riley county is Manhattan, and the glory of Manhattan is schools and churches. One of the finest school buildings in the State is being erected in Manhattan. It will be completed early in the spring; will contain eight rooms capable of seating sixty pupils, and the very best teachers will be employed. We spent several hours at the Agricultural College. The citizens of Manhattan did a noble deed for the place when they secured this admirable institution. We found President Anderson eminently practical and possessing a policy which he has adopted that is giving the students a thorough, practical education, and we see many reasons commanding this institution to the citizens of the State who are looking for some suitable location for educating this generation. The name, Agricultural College, may bar some from training their sons and daughters for future greatness at this institution, and yet a careful scrutiny of the mode and policy of teaching will wipe out all objections. The faculty comprises the very best talent that can be employed, and the advantages to the poor are the same as to the rich, as all is free except instrumental music. The citizens have built a solid city, as all the business places are either stone or brick. There are five stone churches which are beautiful in finish and architecture; seven college buildings; while the mills, elevators, banks and many stores, and about one hundred private residences, besides the hotel, are built of the beautiful stone quarried out of the bluffs near the place. One almost imagines himself in an eastern city, as there is an appearance of permanence and finish.

The last session of the Alpha Beta Society for this term was held Dec. 14th. By the regular debate it was decided that poverty tends to develop the character better than riches. The *Gleaner* was then read by Miss Dora Kinsey and W. H. Sikes. This was followed by a quartette, "The Gushing Rill." We noticed one article in the *Gleaner*, "The Past Term of School," written by Mrs. Coe, which is deserving of special praise. In this article she spoke of the bond of union between students and classmates which had been cemented by friendship, and the interest with which we will watch our fellow-students through life. She also spoke of the wise provision by the administrators of the College for the coming vacation, in which

the indolent may reflect and form new resolutions, while the industrious may, by mental relaxation, prepare themselves for another campaign of study.

The next exercise was a complete surprise to the Society, in the way of a declamation. It was opened by George A. Gale, with a speech on geology. Before Mr. Gale had proceeded far, to the astonishment of all, our worthy President stepped up and commenced delivering, with many gestures, "Mary had a little lamb." Another and another soon stepped up and in a similar manner delivered their orations. Although we could distinguish but little of the different pieces, it was entertaining and caused much merriment. We were then favored with a dialogue, "Aunt Peggy's Courtship." There was a large number of visitors present, the room being well filled. Several Websters complimented us on the interest of the session, and it will long be remembered by all.

S. H. W.

EXAMINATION QUESTIONS.

We publish a portion of the term examination questions, and will present the rest as space permits:

PARLIAMENTARY LAW.

1. (a) Its origin. (b) Highest authority in the United States. (c) Practical value.
2. For what purposes can a member having the floor be interrupted?
3. When is a motion before the assembly?
4. What questions do not require a "second?"
5. Classify motions in the order of their precedence.
6. What subsidiary motions are debatable? Which can be amended?
7. What incidental questions are debatable? Which can be amended?
8. What privileged questions are debatable? Which can be amended?
9. What motions require more than a majority vote?
10. If in a minority of two-fifths, by what motions (in detail) would you resist a determined majority?

GEOMETRY.

The first part of the term the class studied Algebra. Have studied Geometry five weeks.

1. Define line surface.
2. Define equality, equivalency, similarity.
3. State conditions of equality in case of (a) angles and (b) triangles.
4. State conditions of equivalency in case of (a) triangles and (b) parallelograms.
5. State the conditions of similarity in case of (a) triangles and (b) polygons.
6. Prove that vertical angles are equal. Give first corollary.
7. Prove that two straight lines which are parallel to a third line are parallel to each other.
8. Prove that a radius which is perpendicular to a chord bisects the chord and its arc. Give the four corollaries.
9. Show the measure of an angle formed by two chords intersecting in a circle.
10. Demonstrate Prop. V, p. 343, and give the four corollaries. [Note.—This includes the properties of a right-angled triangle.]

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to

make the labor required in the preparation of one

industrial and three literary recitations as much

as the average student can perfectly perform, in

ten hours a day. We design to give the pupil

the worth of the time expended at College; and, in

order thereto, he must do a full day's work with

brain or hand. Only those students who can

maintain a standing of ninety in each study will

be allowed to take more than the prescribed num-

ber of recitations; and no one will be permitted

to have less than one industrial and three literary

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment,

attendance or instruction in the regular courses;

nor are there any "contingent fees" for the repair of

buildings, for the use of books or apparatus, for

diplomas, or the kindred privileges usually grouped

under the term "contingent."

Male students are

furnished instruction, the use of apparatus, instru-

ments or tools, in both the literary and industrial

classes marked out for them, without any charge.

And the same is true of female students in the

regular classes provided for them. Printing and

Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.

Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.

Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

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Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 22, 1877.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.— *Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country, Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Elsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Topeka Commonwealth*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wyandotte Herald*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages

were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgewick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

The Educational Weekly.—The union of the School Bulletin and N. W. Journal of Education, Wisconsin; the Michigan Teacher, Michigan; the Illinois Schoolmaster, Illinois; the Nebraska Teacher, Nebraska; The School, Michigan; Home and School, Kentucky; The School Reporter, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor THE PRACTICAL TEACHER. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, THE PRACTICAL TEACHER, 170 Madison St., Chicago.

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KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

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Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in

THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, DECEMBER 29, 1877.

No. 37.

THE INDUSTRIALIST.

Published every Saturday by the
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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13—1.13
Teachers.....	1.13—1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, in telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

A Ten-inch Track.

From the Boston correspondence of the New York *Express* we condense the following account of a narrow-gauge railroad from North Billerica to Bedford, Mass. It was devised and an experimental section built by George E. Mansfield: "To show how narrow a track may be, and be practical and safe, with his own hands he constructed a railroad having but ten inches width of track, from the elevated village of Hyde Park down to the depot. He also, with his own hands, constructed the cars to run on the track. In these he carried in six weeks over 3,000 passengers from the village down to the depot without the slightest injury to any one. There were several short curves on the way, and the track crossed the highway twice. The people of Billerica, wishing a road across through their town from North Billerica, on the Boston and Lowell Railroad, to Bedford, a distance of eight and a half miles, requested the projector to come and give the people a lecture on narrow-track railroads. Some said, 'It is a chimera notion,' but others said, 'This is of God, and must prevail,' and they gave a helping hand and secured the movement so far as to get a petition for a charter from the Legislature. The charter was allowed. Then the right of way was secured gratis the whole distance. Two very able men gave the way only because, as they said, it was only a visionary, crazy-headed scheme, and would never be accomplished or made to pay.

"Then came the building of the road, which was completed by the first of September, so that cars passed with passengers over the entire route that day, and secured the right of way. There were eleven bridges over the route, one over one hundred feet long. The rails weigh twenty-five pounds to the yard, which is quite strong enough; twenty pounds would do. The road is well equipped. One grade is 155 feet. The engine is placed behind the tender and next the cars, so that when the train moves, the car next the engine draws down upon and increases the adhesion of the engine to the track. Both engine and cars are constructed so as to be very near the ground, giving great advantages in regard to safety, also very little oscillation. The cars have an aisle with one seat on each side, in the manner as ordinary cars have two seats. The length of the cars allows thirty seats, each person having a seat to himself. The cars are warmed with steam, are well ventilated, have closets, water tank, all the modern improvements, Westinghouse breaks, etc. They weigh but four tons and a half, ordinary cars weighing on an average eighteen tons. Hence, Mansfield will carry sixty persons with cars weighing nine tons, while ordinary roads must draw eighteen tons to carry fifty-six persons. The engines are equally light and less costly than on ordinary roads. The road cost \$4,505 per mile. The trains run about twenty miles an hour. Engines weigh about eight tons, and draw two passenger and two freight cars twice per day each way, at a cost of coal only one-fourth that of ordinary engines."—*Christian Union*.

Revolution in the Grain Trade.

The Atchison *Champion* calls attention to the change in the direction and the improvement of the grain trade which is being wrought by the completion of the jetties at the mouth of the Mississippi River. It says:

"One of the evidences of this improvement in the market is noticed in our telegraphic quotations from St. Louis and Chicago. For instance, take the corn quotation, and until the last few months it has invariably been quoted at from five to seven cents per bushel higher in Chicago than in St. Louis. This difference in the quotations, however, did not affect any western dealers, as the increased freight tariff on Chicago freights over St. Louis gave neither the preference, although the greater bulk of the grain did go to the former city. From Chicago, the cheap lake route enables them to reach New

York for a reasonable freight tariff. Corn is quoted in St. Louis this morning at 47 cents per bushel, and in Chicago at 43 $\frac{1}{2}$ cents, a difference of nearly four cents in favor of the former city. This variation in favor of St. Louis has not occurred before in five years. St. Louis, by her barge lines, now has the capacity to ship 280,000 bushels of grain to Liverpool each week. The mammoth firm of Baring Bros., Liverpool, has undertaken the great work of transferring this amount of freight across the Atlantic each week. This grain is shipped to England by the way of St. Louis and New Orleans for twenty cents per bushel less than it has ever been shipped by way of New York or Baltimore.

"The quotations in Liverpool are affected by the demand and not by the cost of carriage; and inasmuch as the market has rarely been overdone at prices at which New York grain has been put in that market, it is unreasonable to suppose that it will be affected by the exports that may go by the way of New Orleans. Heretofore all the profits of the European grain trade have been absorbed by the exorbitant tariff made by railroad combinations in its transit from the Missouri River to the Atlantic coast. It has been demonstrated to the sorrow of the Kansas grain-raiser that it costs from forty to sixty cents to pay the freight on one bushel of grain from Atchison to New York City. Add to this the little picayune price of 15 to 20 cents per bushel, the price corn has commanded in the West, and the producer gets a very insignificant sum when compared with the quoted New York prices. When this twenty cents per bushel that is saved on the freight from Atchison to Liverpool is added to the producer's receipts, it makes a very visible difference in the price of a bushel of corn."

A Little Plain Talk About Our Boys.

Three-fourths of all the American boys with whom we are acquainted would do almost anything rather than work at a trade or some laborious calling for a living. They will clerk at starvation prices, become agents for anything under the sun, wait on tables at hotels, in restaurants, or even hire as bar tenders mixing whiskey and strychnine drinks for bummers, gamblers and guzzlers of all grades and descriptions. Boys from the country, from the towns and the cities, from everywhere, are hunting for places to make a living without work. Western towns are more than supplied with this respectable but impecunious class on the lookout for the royal road to wealth. From the college graduate to the young man who carries in his satchel a diploma from some commercial writing school, which says he has taken a "business course," which means, in fact, a smattering of book-keeping; all grades of intelligence, of natural talent and brightness, have the great American mania, to get a living without work.

They are lounging about the hotels, the saloons, the street-corners, trying to convince themselves that this is a cold, cruel world, when, in fact, they have the "blues," brought on by protracted laziness. We have a most substantial contempt for a lazy man, young or old, and it will somewhat relieve the intensity of our feelings to say plainly that American homes are turning out at this time a large number of shallow-headed, lazy, professional humbugs, who should have been taught a trade. The fact is that a smattering of the common branches taught in our schools, and the ability to write a legible hand, is taken for genius, and the fond parents encourage the boy to do something more honorable than to learn a trade, and the boy that would have earned a reputation in his community as a mechanic, ekes out a precarious living at the fag end of some profession. Foreign-born boys and the sons of foreign-born parents, are taking the places to-day in our shops as master mechanics that could be held by American youths, but for their snobbish pride which their parents have fostered and encouraged. It is high time parents on the farm and in the towns looked this subject

squarely in the face, and undertook to so direct the education of their sons, and daughters too, for that matter, that a trade would not appear to the young man as an indication of inferiority.—*Kansas Farmer*.

Telegraphing Through the Air.

In no branch of applied physical science is there such rapid progress as in telegraphy. The following extract describes a recent discovery:

"Professor Loomis, of Washington, who has devoted his life to demonstrating the practicability of his theory of aerial telegraphing, seems to be on the eve of success. His system is based on a current of electricity, which he has demonstrated exists at different heights, and which transmits communication between two perpendicular wires reaching into it, whatever the distance may be. He has already sent messages in this way for a distance of eleven miles, using the Morse battery in connection with one of his own invention.

"It seems assured that aerial telegraphing by means of rods upon natural or artificial eminences can be successfully practiced at all times, though its great value will be in long distance telegraphing, as from one side of the ocean to the other. Professor Loomis is now making arrangements for a series of experiments between the peaks of the Alps and the Rocky Mountains. If he succeeds, of course telegraphing between the old world and the new will be cheapened a thousand-fold, and Professor Loomis is thoroughly convinced that before many years submarine cables will be lying abandoned and useless in their ocean beds."

Kansas Fall Wheat.

A writer in the agricultural department of the New York *Times* upon Kansas wheat says that the dryness of our summers produces a grain which yields a flour which will bear shipping to tropical countries without injury. The same writer adds:

"Recently it has been discovered that this wheat makes an excellent quality of flour by the "new process," hitherto only spring wheat having been found available for this purpose, and that grown in Minnesota proving the best. Kansas fall wheat, however, makes a "new process" flour of the best quality—quite equal to the Minnesota flour. Samples which we have seen and tested, and the reports of dealers in the eastern market satisfactorily prove this. This gives a higher value to the product of the rich fields of Kansas, and will doubtless aid in establishing an important and profitable manufacture in that State. A large mill has been erected at Hutchinson, in Reno county, in the Arkansas valley, near the center of the State, and is now making 120 barrels of "new process" flour daily. The supply of wheat is larger than the present capacity of the mill, and arrangements are being made to double this without delay."—*Journal*.

WEBSTER once told his friend Harvey that several years before his great debate with Hayne he had investigated the whole subject of the public lands for the purpose of opposing a resolution of Mr. McKinley, a senator from Alabama, proposing to cede the public domain to the States in which they were situated. The question never came up, and Mr. Webster said: "I had my notes tucked away in a pigeon-hole, and when Mr. Hayne made that attack upon me and upon New England I was already posted, and only had to take down my notes and refresh my memory. In other words," said Mr. Webster, "if he had tried to make a speech to fit my notes he could not have hit it better. No man is inspired with the occasion. I never was." Of the many anecdotes about what took place between Mr. Hayne and Mr. Webster afterwards, Mr. Harvey says that there were many which Mr. Webster characterized as untrue, but he vouches for the following: Mr. Webster met Mr. Hayne that night at the President's reception, and as he came up to him, Mr. Webster remarked pleasantly, "How are you to-night?" "None the better for you, sir," was the General's humorous reply.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 29, 1877.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

EXCHANGES will confer a favor by announcing that:

The next term of the Agricultural College will begin Thursday, January 3d, 1878, and close Wednesday, May 22d, 1878.

We heartily appreciate the following from one of the most experienced editors in the State: "The INDUSTRIALIST of the 22d possesses merit worthy of all praise. I congratulate you. The publication is wielding a most healthy influence upon the educational interests of Kansas. A merry Christmas to you, and continued success."

Spaying.

A correspondent writes for information on the above subject. He says: "I see the practice of spaying cows highly recommended in some of the agricultural papers. It is claimed that cows treated in this way lay on fat much faster, and that the meat is much sweeter and of a more delicate flavor than that of other animals. Is this true, and if so why is not spaying more generally practiced by stock-raisers?"

There are several reasons why spaying is not more generally practiced. The practice itself is an old one; about as old as agriculture, in fact; and while it has had its earnest advocates, an equally large and respectable body has pronounced the practice a dangerous one, even in the hands of experienced operators, and of doubtful utility where successfully performed. The operation is a very expensive one, as no one but a professional ought to attempt it, and even in such hands fully five per cent of all the animals operated upon die under the operation. We are well satisfied that spaying is not so generally practiced now as it was fifteen years ago, a fact sufficient at least to establish a presumption against the practice.

Like many other debatable agricultural questions, we greatly need accurate experiments to test the value of spaying. The mere fact that one farmer has found a given practice successful and another unsuccessful is worth something, but lack of accuracy in carrying out the details of the experiment greatly lessens the value of the experience.

In the matter of spaying, the most valuable experiments with which we are acquainted are those performed by the German veterinary surgeon Schmidt, in 1874 and 1875. This gentleman castrated, all told, twenty-one cows, and carefully compared them with an equal number of whole animals. The result of these experiments showed that for several weeks after the operation the animals lost flesh very rapidly, and even at the end of the fifth week the loss in some cases was as high as 155 pounds. From this time on, the castrated cows showed no advantages over the intact animals in laying on flesh; keeping pace with them, indeed, but doing no more. As to the quality of their flesh, Mr. Schmidt pronounces that from the spayed cows excellent, but no better in his judgment than that of others.

The experiment quoted above had for its object, also, to ascertain the effect of spaying upon the production of milk. The results in this regard corresponded very closely to the production of flesh. In all cases there was a considerable decrease in the quantity of milk for some time after the operation, in some cases this decrease being very great. "In many cases the quantity of milk never rose again; in others it reached the original

amount, or thereabouts, in a few weeks' time, but only to fall off rapidly after a very short continuance at that level. In most cases the period of lactation was extended, in some cases to fourteen or fifteen and, in one case, to seventeen months." The fact must be placed to the credit of this operation that the milk obtained from the spayed cows was greatly improved in quality, there being a very considerable increase both of fat and caseine.

Our correspondent will, we think, see from all this why spaying is not more generally practiced by stockmen. Judging from the variety of opinions held by veterinarians upon this subject, we are decidedly of the opinion that the disadvantages of spaying much more than counterbalance the advantages, whatever they may be.—Prof. Shelton.

Accuracy, Speed, Neatness.

How seldom do the pupils in our common schools acquire the habit of accuracy, coupled with any considerable degree of speed in arithmetical computations. They go through the book, but when it is done they cannot perform an example in one of the fundamental rules with any certainty, that they have obtained the correct result, unless the answer is before them. Mathematics is called an exact science, but there is nothing exact about it if the operations performed contain mistakes. In order to make the old maxim, "figures won't lie," available, every part of the work performed must be absolutely true. In all the complex computations required in the solution of any arithmetical problem, the art part of it is sifted down to simple addition, subtraction, multiplication or division; and if these can be performed easily, accurately and speedily, the student can be interested in every principle that is reached, can give his time more to the science of it, can understand it thoroughly, and make decided and substantial progress. While on the other hand, if these fundamental rules are performed carelessly, so that the work must be done two or three times over in order to correct mistakes, or if it is done very slowly, it is next to impossible to awaken any interest in the study; it is all uphill business. The student's time is so much occupied in the art part that he has little to devote to the science, does not understand it because discouraged, and wishes his arithmetic was in the bottom of the Atlantic Ocean.

And when it comes to the application of his knowledge to the practical examples of every-day life, he takes no satisfaction in a feeling of certainty that his results are absolutely correct. The accountant whose work is full of blunders can scarcely obtain a position at any wages, while the labor of the one who very rarely or never makes an error is in great demand at a very remunerative price.

Teachers, drill your pupils in the elementary classes to habits of accuracy, and as far as possible to know that their work is correct the first time it is performed. It requires time and patience, but it can be done, and it will pay for the time spent in securing it. Use much ingenuity to accomplish it. At the same time cultivate speed. Time is money. Speed adds interest, and it has been my experience as a teacher that those who perform their work promptly are more likely to be correct in result than those who hesitate and occupy much more time. Add to this also neatness in form. If a pupil makes an awkward figure five that might be taken for an eight or a three, show him how to make a better one. Point out the criticism in its form, and ask him to bring you a block of figure fives six or eight

square the following day. Encourage improvement, but repeat the request if necessary until the figure is neatly and rapidly made.—Prof. Platt.

Impaction of Third Stomach--Dry Murrain.

CORINTH, Kas., Dec. 20th, 1877.

PROF. SHELTON,

Dear Sir:—I take the liberty of giving you the following symptoms of a disease among the cattle of this locality, and ask its name, cause and treatment. An early answer through the INDUSTRIALIST is requested. I myself have lost eight head, and I presume fifty have died in this locality. These cattle are running in the stalks, and have free access to running water. The deaths occurred mostly during the first week in December; a few since.

Nearly every animal was taken sick in the morning before nine o'clock. The first symptoms were twitching of the muscles, the animal frequently putting his nose to his side as if in great pain. In about three minutes the animal is stiff in the joints, and in thirty to forty minutes more lies down, and cannot again arise, death following in from five to nine hours. Have given physic, including linseed oil, warm salt water, etc., but every one taken has died. A post-mortem examination showed the stomach and intestine loose, but the manifolds was packed hard and dry, and much inflamed. The disease is called here blackleg; I think it the dry murrain. Many, however, are doctoring whole herds for the blackleg. Respectfully,

J. B. FARWELL.

Our correspondent describes quite accurately the disease known variously as dry murrain, staggers, impaction of the manifolds, etc. This disease has no relation whatever to the disease called blackleg, and any "doctoring" your neighbors may be indulging in for this latter complaint is so much time wasted on their part, and useless suffering for the animals. Impaction of the manifolds may be caused by any dry, fibrous, innutritious food; and it is always a disease to be dreaded, being nearly always attended by fatal consequences. In the early stages of the complaint, if prompt action is taken there is some chance of saving the animal, but after it once gets down a cure comes little short of a miracle.

In treating this disease, we must rely mainly upon the use of active purgatives and stimulants, with frequent injections. Give 1½ pounds glauber or epsom salts, dissolved in two pints of hot water with one ounce of ginger, and a large quantity of gruel or other watery fluids. Follow this with the ginger and pint doses of linseed oil every three hours. If the animal exhibits great distress, give ½ ounce of laudanum, but give no more of this than is sufficient to keep down the pain. During all this time, ply the animal liberally with injections of soap-suds, taking care always to leave as much of this in the intestine as the animal will retain. After seven hours, if no action is obtained, repeat the dose of salts and oil. We give this treatment without consulting the standard works upon the subject. In a case that occurred upon the College farm two years ago, this disease yielded after a time to the above treatment.

We earnestly counsel Mr. Farwell and his neighbors to prevent this dire complaint, even if they have to keep their animals from the stalk fields altogether. The abundant rains of the past fall have washed and rotted the stalks to such an extent that what remains is little else than indigestible woody fiber. This fact undoubtedly explains the exceptional prevalence of impaction the present season. But where cattle are allowed to range the corn fields they ought to have free access to salt; and especially the owner should know that all are abundantly fed and watered before they enter the stalks. After all these precautions, the animals ought not to be allowed to remain in the stalks longer than half of each day.—Prof. Shelton.

English Grammars.

We have just spent several hours in looking through the text-books on English grammar that stand on a shelf in our library. Of the frequent crops which have been produced from the fertile brains of our school-book makers, some dozen individual specimens of English grammars have come into our possession. In most of the public schools throughout our country, one after another of these treatises has been used for a time and then discarded. By this frequent change of text-books a few publishing houses have reaped a rich harvest, but it has been at the expense of the people. The companion volumes of those in our library are found in all the households of our land, and are generally counted as useless rubbish.

An intelligent German once asked us, "Why do the grammars in this country so soon go out of fashion?" We gave him an evasive answer. We will submit the same question to the readers of the INDUSTRIALIST, at the same time adding another: What effect has the study of English grammar in the public schools had upon the English language as now spoken in this country?

The pages of some of these volumes before us seem to be the transcript of impressions stamped upon our minds long ago, when at least one-third of our time in school was spent in memorizing declensions, conjugations and rules of syntax, and in parsing. In our earlier experience as a pedagogue, we heroically did service in dragging scores of unwilling minds through the same miserable slough through which we ourselves had been forced. Hence, it is not strange that these old volumes bear a familiar look. Here is Goold Brown, the lineal successor of Lindley Murray, and Kirkham, Smith, Wells, Harvey, Pineo, Clark and Greene. These belong to the old school. In some of these treatises such insignificant matters as capital letters, rules for forming derivative words and punctuation are not noticed. In Clark they are briefly noticed in an appendix.

The following belong to what may be called the new school: Kerl, Swinton, Lee & Hadley, and a work bearing the imprint 1878, prepared by Reed and Kellogg, teachers in the Brooklyn Collegiate and Polytechnic Institute. Whitney's Essentials of English Grammar, though recently published, belongs to the old school. It is the work of an eminent philologist, but in our humble opinion not at all adapted to our public schools. Comparing the grammars of the old school with those of the new, we notice several points of difference.

The English language is exceedingly simple in its etymology and syntax. The authors of the old school do not recognize this. Both the etymology and syntax of the English are stretched upon the Procrustean bed of the Latin, and made to fit regardless of consequences. In form and arrangement the grammars of the later school do not so much resemble the Latin grammars, and this latest work least of all. In "Higher Lessons in English," the science of the language is made tributary to the art of expression, and yet the essential principles of the science are fully set forth. The usual long tables of declensions and conjugations are very much curtailed, and are placed in the latter part of the book. Numerous devices to stimulate composition are presented. A thorough drill in the use of capitals, punctuation marks, and in composition would be obtained while passing through this series. Graded Lessons in English is adopted for young beginners, while the Higher Lessons is for those more mature or more advanced. Teachers who desire assistance in teaching English would do well to send to Clark & Maynard, New York, for these two books.—Prof. Ward.

THE INDUSTRIALIST.

SATURDAY, DECEMBER 29, 1877.

A happy new-year to all.

The holidays furnish a very good excuse for the scarcity of local matter this week.

We will send four numbers of the *INDUSTRIALIST* without charge to any person desiring it.

After you have read this paper, hand it to the next most sensible person of your acquaintance.

President Anderson and family are spending the vacation with Col. J. B. Anderson, at Junction City.

New students desiring information respecting boarding, or rooms for "baching," will please address A. A. Stewart.

We will be happy to send the *INDUSTRIALIST* free to any teacher in Kansas for two months. Send in your address immediately.

Hon. Albert Griffin, editor of the *Nationalist*, has had quite a severe spell of sickness, but is now able to take charge of his paper.

The Adams House in Manhattan is one of the best hotels on the Kansas Pacific, and we are glad to see it running full. Col. Stanton understands his business.

The old students of the College spent two evenings of this week very pleasantly together. On Thursday evening they were at Miss Josie Harper's home, and on Friday evening at W. C. Howard's.

Several of the former students of the College are spending the holidays in Manhattan. George H. Failyer, Harry C. Rushmore, W. C. Howard, J. M. Howard and Will Peckham are among the number.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Prof. Kedzie returned from his lecturing tour Thursday evening. He reports a successful trip considering the weather, which finally compelled him to postpone some of his appointments until a more favorable time.

Mr. Theodore S. Case, postmaster at Kansas City, and editor of the *Western Review of Science and Industry*, published in that city, visited the College buildings and called at our office on Thursday. Sorry we were not in at the time.

The calendar of the Agricultural College for 1878 will be as follows: The Spring Term will open Thursday, January 3d, and close Wednesday, May 22d. The Fall Term will begin Wednesday, September 4th, and close Wednesday, December 20th.

Persons in Manhattan or the vicinity who desire boarders will please notify A. A. Stewart of the fact, giving the number they can take and prices. Those who have rooms to rent will oblige us by doing likewise, stating number and size of rooms with price per month.

We have received a neatly-printed catalogue of the Berkshire swine owned and for sale by that prince of breeders, Albert Crane, Durham Park, Marion Co., Kansas. Every one who has dealt with this gentleman can testify to the superior quality of his stock, whether cattle or hogs.

Manhattan observed Christmas in the usual manner. Most of the churches had Christmas trees accompanied by a variety of exercises; and as we went from church to church, we saw nothing but happy faces and glad hearts. Quite a number of homes indulged in family trees which we hear spoken of as being very praiseworthy.

Prof. Gale's youngest daughter, little Hattie, was surprised on Christmas eve by a remarkable visit from the venerable old Santa Claus. Santa has made it a point to annually slip down the chimney and leave in her stockings some tokens of his regards; but he never before favored her so much as to bring her a Christmas tree—full of presents, and then cap the climax by removing the presents and delivering them to her with his own hands. Hattie was very much pleased by Kriss Kringle's visit, and with the many pretty and very useful things which he gave her. Although the old gentleman came more especially to see her, he nevertheless remembered the other members of the family as well as the boarders. The tree contained some fifty presents, and was beautifully trimmed and lighted. Among the gifts we noticed the following silver articles: One set of knives, a caster,

a butter knife, two napkin rings, a napkin holder, a pickle dish and a watch chain. Besides these there was a large family Bible, a gold ring, several beautiful pieces of fancy work, silk handkerchiefs, and many other minor presents, to say nothing of the toys and "sich" like. It was a very pleasant little entertainment, enjoyed by all—Hattie in particular.

NATIONALIST ITEMS.

There has never been a Christmas when our merchants have sold so many goods as this.

We saw Frank Quinby on the streets Thursday. He says the mud is something less than one hundred feet deep between here and Milford.

The trains were crowded from Manhattan east and west, last Wednesday, by students who were going home to spend holidays and vacation.

Jasper Howard came up from his school near Topeka last week. He was accompanied by a young lady, but we have not as yet heard the particulars.

We notice by the eastern papers that it has been unusually warm east for this season of the year; but we wonder if the day after Christmas, early in the morning, men could there, as we saw them here, work out of doors in their shirt sleeves.

The warm weather for the past two weeks has, it is said, caused the fruit buds to swell, vegetation to begin to grow, and even small grain is too tender to withstand a freeze. It is feared that if it continues warm much longer, next year's fruit crop will be destroyed.

The young gentleman (?) who rode up to the depot Thursday evening, to introduce his pony to the engine, didn't feel so gallant when he found himself being dragged the wrong way of the hair, on the ground. Don't try to show off any more, when the girls are looking.

EXAMINATION QUESTIONS.

DRILL IN ENGLISH.

1. Write the elements of which the small letters are composed.

2. Write the letters containing the 4th and those containing the 6th elements.

3. Write all the capital letters, giving each its appropriate elements.

4. Give the rules of spelling for doubling the final consonant, dropping the e and changing the y.

5. Spell correctly the following words: Nesesity, anual, Sentenial, aggrieve, separate, cinseer, acseed, defered, consience, storys, comencing.

6. State the essential elements of good reading.

7. Define a sentence. Name the classes of simple sentences and tell how each closes.

8. Define simple subject, simple predicate, also complex subject and complex predicate.

9. What are adjective elements, and what forms have they?

10. State the difference between verbs, participles and infinitives.

11. What are adverbial elements, and to answer what questions are they chiefly used?

12. Define complex and compound sentences and tell where the comma should be used when writing them.

13. Write a complex sentence containing an adjective proposition, not used as an essential identifier.

14. Write one containing an adverbial proposition.

15. Write a compound sentence.

16. What are compound elements, and where do you use a comma when writing them?

17. Write a page of your thoughts about money.

DRILL IN ARITHMETIC.

1. Define fractions—proper, improper, complex and compound, also a mixed number.

2. Add 274 5-8, 369 7-12 and 540 13-16.

3. Multiply 438 by 27 5-7.

4. Define decimal fractions. Write 527 hundred thousandths.

5. State the rules for pointing in division of decimals.

6. What are compound numbers, and how is the standard inch obtained?

7. Write the tables of long, square and liquid measures.

8. How many bushels will a bin contain that is 8 feet 4 inches long, 3 feet 5 inches wide, and 5 1-2 feet high?

9. Write the equations of Percentage and define all the terms used.

10. Write the equations of Profit and Loss, Commission and Insurance.

11. Bought a coat for \$8.40 and sold it for \$10.25. What per cent do I gain?

12. Sold 40 barrels of apples, each containing 2 bushels and 3 pecks at \$1.10 a bushel, on commission of 5 1-2 per cent. What is my commission?

RHETORIC.

1. Discuss Words. Origin and classes. Give five examples each of Latin prefixes and suffixes. Show their significance.

2. Discuss Diction. Purity, Property and Precision.

3. Discuss Sentences. Kinds, Clearness, unity, Emphasis, Strength.

4. Discuss Figures of Speech. Origin, Use. Describe the figures in the following examples: He is a pillar in the State. His memory is like wax to receive impressions, and like marble to retain them. In war the bullet, in peace the ballot rules. The snows of sixty winters have whitened his head.

Criticise the following: I smell a mouse; it is floating in the air; we will nip it in the bud. I bridle in my struggling muse with pain that longs to launch into a bolder strain.

5. Discuss Style. Varieties of. Distinguish between Wit and Humor.

6. Discuss Versification. The foundation of Verse. Name and illustrate the four different kinds of feet.

7. Discuss Poetry. What is Poetry? The Epic, the Dramatic, the Lyric.

8. Discuss Prose. Varieties, Essentials in Letters, Diary, News, History.

ADVANCED ARITHMETIC.

1. Find the amount of \$375.50 from March 10th 1876 to January 1st 1878, interest at 10 per cent.

2. Mr. H. Wright gives a note for \$165 to Miss Jennie Coe to-day, payable at the Manhattan bank on the 15th of next March, interest at 12 per cent. Write the note.

3. Write the U. S. rule for computing interest when partial payments are made upon a note.

4. Define true Discount and Present Worth and tell how to find each.

5. What is the Bank Discount of a note for \$230 drawn for 90 days, at 18 per cent? Also the Proceeds.

6. Find the face of a sight draft that can be purchased for \$480. Exchange at 1 1-4 per cent premium.

7. Define Ratio—Arithmetical and Geometrical. Name the terms and state the principles applying to them.

8. Define Proportion—Simple and Compound, cause and effect, and state what proportion may be made from two similar causes and their effects; also how to find a missing term.

9. If 12 men in 8 days working 10 hours a day cut 36 cords of wood, how many cords can 50 men cut in 26 days working 12 hours a day?

10. Find the square root of 77,352,025.

11. Find the cube root of 257,259,456.

ENTOMOLOGY.

1. What is Entomology? What is an insect? And how are insects divided with respect to their food?

2. Describe the circulatory system of an insect. Also the respiratory system.

3. Name the sub-kingdoms and classes of the Animal Kingdom according to the Caverian system.

4. Give the characteristics of the order Neuroptera, and name some insects belonging to this order.

5. Characteristics of Orthoptera, and describe one or more insects belonging to this order.

6. Characteristics of the Hemiptera and describe one or more insects belonging to this order.

7. Characteristics of Coleoptera and give example.

8. Characteristics of Diptera and give example.

9. Characteristics of Lepidoptera and Hymenoptera and give example.

10. State how some insects are useful, with examples. And also the natural and artificial means by which destructive insects are kept in check.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a

fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this

THE INDUSTRIALIST.

SATURDAY, DECEMBER 29, 1877.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Large*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wyandotte Herald*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advan-

tages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

The Educational Weekly.—The union of the *School Bulletin* and *N. W. Journal of Education*, Wisconsin; the *Michigan Teacher*, Michigan; the *Illinois Schoolmaster*, Illinois; the *Nebraska Teacher*, Nebraska; *The School*, Michigan; *Home and School*, Kentucky; *The School Reporter*, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor *THE PRACTICAL TEACHER*. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, *THE PRACTICAL TEACHER*, 170 Madison St., Chicago.

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KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

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THE INDUSTRIALIST

VOL. III.

MANHATTAN, KANSAS, SATURDAY, JANUARY 5, 1878.

No. 38.

THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13	1.13
Teachers.....	1.13	1.13
Professional education:		
Ministers.....	0.43	
Lawyers.....	0.55	
Doctors.....	0.73	1.71
Industrial education:		
In agriculture.....	59.13	
In manufacturing and mechanical.....	14.63	
In personal service.....	13.89	
In trade and transportation.....	9.51	97.16
	100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Christmas Eve.

"Twas the eve before Christmas; "Good-night" had been said, And Annie and Willie had crept into bed; There were tears on their pillows, and tears in their eyes, And each little bosom was heaving with sighs, For to-night their stern father's command had been given,

That they should retire precisely at seven, Instead of at eight; for they troubled him more With questions unheard of than ever before; He had told them he thought this delusion a sin, No such being as "Santa Claus" ever had been,

And this was the reason that two little heads

So restlessly tossed on their soft, downy bed.

Eight, nine, and the clock on the steeple tolled ten;

Not a word had been spoken by either till then, When Willie's sad face from the blanket did peep, And whispered, "Dear Annie, is you fast asleep?" "Why no, brother Willie," a sweet voice replies, "I've tried all in vain, but I can't shut my eyes, For somehow it makes me so sorry because

Dear papa has said there is no 'Santa Claus.'

Now we know there is, and it can't be denied,

For he came every year before mama died;

But then I've been thinking that she used to pray,

And God would hear everything mama would say.

And perhaps she asked him to send Santa Claus here

With the sack full of presents he brought every year."

"Well, why tan't we p'ay dest as mama did then,

And ask God to send him with presents aden?"

"I've been thinking so, too." And without a word more

Four little bare feet bounded out on the floor,

And four little knees the soft carpet pressed,

And two tiny hands were clasped close to each breast.

"Now, Willie, you know we must firmly believe,

That the presents we ask for, we're sure to receive.

You must wait just as still, till I say the 'Amen.'

And by this you will know that your turn has come then;

Dear Jesus, look down on my brother and me,

And grant us the favor we are seeknig of Thee.

I want a wax dolly, a tea-set and ring,

And an ebony work-box that shuts with a spring;

Bless papa, dear Jesus, and cause him to see

That Santa Claus loves us far better than he;

Don't let him get fretful and angry again

At dear brother Willie and Annie. Amen."

"Please Jesus 'et Santa Taus tum down to-night,

And b'ing us some p'esents before it is light.

I want he should dive me a nice 'ittle s'ed;

With b'ight shinin' 'unners, and all painted 'ed;

A box full of tandy, a book and a toy,

Amen, and den Jesus, I'll be a dood boy."

Their prayers being ended, they raised up their heads,

And with hearts light and cheerful, again sought their beds.

Eight, nine, and the little French clock had struck ten,

Ere the father had thought of his children again;

He seems now to hear Annie's half suppressed sighs,

And to see the big tears stand in Willie's blue eyes;

"I was harsh with my darlings," he mentally said,

"And should not have sent them so early to bed.

But of course they've forgot their troubles ere this,

And that I denied them the thrice asked for kiss;

But just to make sure, I'll steal up to the door,

For I never spoke harsh to my darlings before."

So saying, he softly ascended the stairs,

And arrived at the door to hear both of their prayers.

His Annie's "bless papa" brings forth the big tears.

And Willie's grave promise falls sweet on his ears.

"Strange, strange I'd forgotten," said he, with a sigh,

"How I longed, when a child, to have Christmas draw nigh.

I'll stonke for my harshness," he inwardly said,

"By answering their prayers ere I sleep in my bed."

Then he turned to the stairs, and softly went down,

Threw off velvet slippers and silk dressing-gown.

Donned hat, coat and boots, and was out in the street,—

A millionaire facing the cold, driving sleet.

Nor stopped he until he had bought everything,

From a box full of candy to the tiny gold ring.

Then homeward he turned with his holiday load,

And with Aunt Mary's help in the nursery 'twas stowed.

As soon as the beams of the bright morning sun

Put the darkness to flight, and the stars, one by one,

Four little blue eyes out of sleep opened wide,

And at the same moment the presents espied.

Then out of their beds they sprang with a bound,

And the very gifts prayed for were all of them found.

They laughed and they cried in their innocent glee,

And shouted for "papa" to come quick and see

What presents old Santa Claus brought in the night,

(Just the things that they wanted) and left before light.

"And now," added Annie, in a voice soft and low.

"You'll believe there's a Santa Claus, papa, I know."

While dear little Willie climbed up on his knee,

Determined no secret between them should be,

And told in soft whispers, how Anna had said,

That their blessed mama, so long ago dead,

Used to kneel down and pray by the side of the chair,

And that God, up in heaven, had answered her prayer;

"Then we dot up and prayed dest as well as we could,

And Dod answered our prayers. Now wasn't he dood?"

"I should say that He was, if He sent you all these, And knew just what presents my children would please.

Well, well, let him think so, the dear little elf, 'Twould be cruel to tell him I did it myself."

Blind father! Who caused your stern heart to relent,

And the hasty words spoken so soon to repent?

'Twas the Being who bade you steal softly upstairs,

And made you His agent to answer their prayers.

the metric system. They think that the change ought to be accomplished within two years. It is a remarkable fact that Americans, with all their boasted readiness to adopt labor-saving inventions, and having led the world in the use of a decimal currency, should be one of the very last nations of the globe to adopt what John Quincy Adams in his official report pronounces the greatest invention of human ingenuity since that of printing, and a greater labor-saver than steam.—*Emporia News*.

LUCY STONE ON KANSAS.

The following is from a letter written by Lucy Stone to the Boston *Globe*, after making a trip through the State to Colorado:

"There, on 10,000 fields, waves just such magnificent corn as was the admiration and wonder of the Centennial exposition. On the wheat fields where the harvest has been gathered, straw was put up in stacks such as home-staying Yankees never dreamed of. On one farm I counted twenty-five of these stacks, and on the single place was straw enough to bed all the cattle of Massachusetts. The grass was so tall that a woman who was walking through it parted it with her hands above her head, which was only lower than the grass. The crop of flax and hemp was fine, and as we whirled past on the cars, we found ourselves saying, 'Wonderful! Wonderful!' Kansas is by far the finest State we ever saw."

A TRAMP through the mines this week convinces us that mining operations are still in a vigorous and healthy condition. Over 300,000 pounds were taken out last week and turned in, and yet we are told that a large amount of mineral remained at dumps and wash-places, unwashed, owing to the cold weather. Had the weather been favorable, the yield of last week would have closely approximated 400,000 pounds. This week the weather has been more favorable, but water has bothered the miners considerably, owing to the heavy rains of last Monday.—*Galena Miner*.

ONE of the most encouraging signs of the times for Leavenworth is the constantly increasing demand for goods of Leavenworth manufacture, not only in Kansas, but throughout the adjoining States. Every manufacturing establishment in the city has all the orders it can fill, and wherever Leavenworth goods are introduced, further orders inevitably follow. Everything that is manufactured here—from a collar-box to a steam engine, from a box of matches to an iron bridge, from the cheapest kitchen chair to the finest of parlor furniture—finds a ready sale.—*Leavenworth Times*.

THE doctrine of "mental discipline" is a good one, but the term is a convenient one to "cover a multitude of sins." It is too often used as an argument to compel students to fritter away time on certain subjects, when instinct teaches them that their time should be employed on other subjects. A student's time is too precious to be trifled with.—*Galaxy*.

THE Commonwealth says that State Auditor Bonebrake has been at work making calculations which are of interest. The increase in population since 1871 in the State is 79 per cent; in taxable property 49 per cent; and State taxation per capita has decreased 91 per cent. This is a good showing.

T. C. HENRY, of Abilene, recently imported 35 car loads of sheep, all wethers. That accounts, doubtless, for the "all kinds of weathers" we've had this season here in Kansas.

SWITZERLAND has passed a law prohibiting children under the age of fourteen from being employed in manufactures after the first day of next May.

Three million dollars' worth of American fruit exported to Europe last year—a very good showing for a new article of export.

THE INDUSTRIALIST.

SATURDAY, JANUARY 5, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

We are glad to receive *Our School Journal*, published by the teachers and pupils of the Columbus public schools. It is the same size as the *INDUSTRIALIST*, and is a good move in the right direction. Success!

THE third number of the *Educational Calendar* is out, and is as full of good things as an egg is of meat. Its circulation is 7,500 copies, and every friend of education, and especially every teacher, should at once forward twenty-five cents to George W. Martin, Topeka, for a year's subscription.

Manhattan Horticultural Society.

Agreeable to previous notice, the Manhattan Horticultural Society met at the Horticultural Hall of the College, Dec. 29, at 2 o'clock P. M., President T. C. Wells in the chair. After preliminary remarks and the reading of the Constitution and By-Laws of the Society, the members proceeded to elect officers for the coming year, resulting in the choice of Mr. T. C. Wells, President; Prof. M. L. Ward, first Vice-President; Judge Blain, second Vice-President; Rev. R. D. Parker, Secretary; Capt. Todd, Treasurer.

A paper was read by J. E. Platt, giving a history of Hon. Welcome Wells' orchard, which stated that the orchard was planted between 1860 and 1869. The largest planting at any one time was eight hundred trees in the spring of 1866. The first setting of trees nearly all died, and the second only about half of the trees lived, but Mr. Wells continued to plant. He has planted about twenty-five hundred apple trees, of which nearly two thousand are now growing finely. He has also planted three hundred and fifty pear trees, of which only about one hundred are now thrifty, the blight and grasshoppers having destroyed most of them. The trees were set in squares twenty-four feet apart each way, and protected from the wind, as well as from rabbits, by tying coarse prairie hay, set endways about each tree. The ground was cultivated in corn and potatoes, giving the trees a wide berth. They were allowed to head rather low and were pruned but a little. A shelter belt of forest trees was set around the entire orchard as a protection from high wind, the whole surrounded by a tall hedge. The orchard covers about thirty-five acres. Mr. Wells has taken much pains with his orchard, but is amply rewarded in the yield of fruit, it being this last year over five thousand bushels, and the year before, about four thousand bushels. The total cash receipts from 1872 to 1877 are not far from \$10,000, the greater part of the money coming from four kinds of winter apples—Winesap, Ben Davis, Geniton and Limber Twigg. The spring frost in 1873 killed nearly all the buds except the Genitons, and no apples at all were raised in 1875 on account of the grasshopper destruction the fall previous. 1873 was the only year in ten in which the fruit was seriously injured by spring frosts. Mr. Wells has been at work upon his orchard seventeen years, and now congratulates himself on having a successful and profitable orchard.

After the reading of this paper, Prof. Gale made a report in reference to ornamental trees that have stood the trial of grasshoppers, drouth and hard winters for the last ten years. There have been planted upon the College farm from twelve thousand to fifteen thousand ornamental trees.

Not more than five hundred are now living. These are the Deciduous Cypress, four varieties of Pine and the Red Cedar. The Professor recommended highly the Deciduous Cypress, of which he exhibited a specimen of eight years' growth and five inches in diameter. Prof. Gale was requested to state at the next meeting matters of interest that were discussed at the last meeting of the State Horticultural Society, at Parsons.

The Society then adjourned to meet on the second Thursday in February at 2 P. M. The meetings are open to all persons interested in the subject, and any one may become a member by a vote of the Society and the payment of an admission fee of fifty cents.—J. E. Platt.

Farmers, Educate Your Children.

The *Atchison Courier*, one of the best German papers published in the West, has a strong article, of which Mr. J. D. Walters furnishes us the following free translation:

"Reading the long list of students at the Kansas State Agricultural College, at Manhattan, we were astonished to find so few German names. Why is it that our German friends do not avail themselves of the splendid opportunity to give their sons and daughters a better education? The answer is simply this: The German farmer and, to a great measure, all the farmers are too indifferent about the welfare of their children. In the United States, every one who wants to can get an education, be he rich or poor. It is here not the denial of precious privileges, but rather the stupid stinginess of the parents that so often keeps the children in ignorance. There may be cases when parents continuously need the helping hands of their sons and daughters, but in most cases some time could be spared and a chance given them to go to school. An education is worth more than a few U. S. bonds; it is a capital that brings richer interest, a capital that will stand war and panic and bear until death."

The real value of a watch consists in the movement and not in the case, however costly that might be. Without the movement the thing ceases to be a watch. Just so with mankind. It is not the wealth of a person, nor his jewels, nor his fine dress, nor his color; it is his education, his character, and his accomplishments that give him a real value and a corresponding social standing in society.

There is in the whole Union no State perhaps that has cared better for the proper education of the coming generations than Kansas. In previous articles, we have often pointed with pride to the steadily increasing school funds. In a few years, when all the school lands are sold, the State will be able not only to pay the teachers from the interest of this capital, but it will perhaps be able also to buy the text-books and other necessary school material. Besides the common schools, the State owns several normal schools, a University, and an Agricultural College. The latter is an institution for the direct benefit of the farmer and the laboring classes. Up to this date, the State has appropriated to it nearly \$150,000 for buildings and grounds. The Congress has donated 92,000 acres of land for teachers' wages and running expenses. The annual interest of the so-created fund is sufficient to meet the running expenses, and will in time amount to perhaps \$50,000.

But as a wise government has provided in such a liberal manner for the free education of farmers and workingmen, it is an unpardonable neglect that only so few of our countrymen avail themselves of this opportunity. The Agricultural College, at

Manhattan, furnishes a thorough and practical education, and will make farmers of your sons in the truest sense of the word. Tuition is free. Students have to furnish their own board, but this item is so small that few farmers can excuse themselves with poverty. A great many will claim that they can teach their boys at home how to sow, plow and farm, and so save the expense of even that. This is true to a certain degree, but there is a difference in doing work. An ox or a mule works, but you expect a different kind of work from a man. You want your sons to know what they are doing and why they are doing it; you want them to use their intelligence as well as their hands. This intelligence is developed only by a systematic training. Therefore, farmers, do not hesitate to spend the few dollars. It is an expense that will come back again manifold; an expense which you will never regret. Your children have a right to claim an education that will make them useful and intelligent citizens of our great Union."

Farmer's Education.

The routine work of the farmer is as different from that of the minister as is the work of the merchant from that of the sailor. The knowledge which is of most use to the one is not equally, if at all, useful to the other. Hence, it certainly is clear that the course of study followed by the future farmer should differ from that taken by the future preacher, just in the degree and to the extent that the uses which each will make of knowledge are different. Farmers need an education as broad, thorough and practical as that of lawyers, but do not need the same education, any more than the astronomer and surgeon need the same education.

What knowledge will be most serviceable to the future agriculturalist? He cannot, in a life-time, much less in a few years spent at college, acquire all knowledge, or learn a tithing of all that is interesting, curious, or even distantly related to agriculture. He is limited by want of time, and often by lack of money, so that he must select from among the things known those which will give him the best success as a farmer.

He needs a practical knowledge of his own language, that he may fully understand the ideas of others, and sufficient skill in the use of that language to express his own ideas clearly and vigorously; but does he need the same familiarity with Latin, Greek and Hebrew that is essential to the best success of a professor of philology in a European university? or does he need the same skill in rounding sentences and selecting rhymes that is prized by the poet? He needs a knowledge of mathematics as used in a business life, and such skill as will enable him readily and accurately to make all the computations and keep all the accounts incident to his occupation; but are conic sections and the calculus as serviceable to him as to the astronomer?

Up to a certain point, English and mathematics, if practically taught, are of great value to every man, no matter what his vocation; but neither is in itself an end. Each is only an instrument to be used in gaining an end; and the first object of the student should be the acquisition of a ready skill in the use of the instrument. If, after so doing, he is able to study the curiosities of literature, as an expert, so much the better; but ability to write legibly, to spell correctly, to speak grammatically, and to use the word which exactly expresses his meaning, is of far greater moment. And it is a fact that oftentimes practical English and mathematics are sacrificed in the effort to rush the student through the "higher," and, so far as

he is concerned, the "fancy" branches of each.

The principle of selection thus indicated is applicable to a score of other sciences, all of which are interesting to the scholar of elegant leisure; each of which is of great value to one specialist, but of no value whatever to another specialist, and many of which are practically valueless to the farmer.

But now there are some kinds of knowledge which are of special service to him, and which are not equally so to the physician, jurist, or mechanic. His daily work is with plants; and plants are but so many curiously wrought machines. These have different parts, which perform different services, and which depend upon dissimilar conditions. For exactly the reason that a practical knowledge of anatomy is useful to the surgeon, is a practical acquaintance with botany useful to the farmer.

But plant machinery does not impel itself; it is driven by forces chained in the earth and air, as the engine is driven by steam. He needs to know both the mechanical and chemical action upon plant growth of light, heat, water and soils; and how to increase or decrease this action, as his interests may require. Hence, a practical knowledge of physics and chemistry is valuable to him.

Plants are subject to the depredations of insects and birds. These, in turn, are devoured by others. He should know and cherish his zoological friends, and use their instincts in the destruction of his foes. Two reasons make a knowledge of the habits and value of domestic animals indispensable. First, because they furnish his motive power for the plow; and second, because many of his crops can be profitably sold only after their conversion into flesh and milk.

The knowledge of these, as of other sciences, should be imparted and acquired with reference to the use which he is to make of it, viz., as enabling him to correctly answer the question that is always uppermost in the true farmer's mind—"Will a given thing pay?" Real farmers do not plow from dawn to dark, swelter in the harvest field, or shiver in the corral, just for the fun of the thing. They farm for profit. They do not toil in order that the sweat may trickle to the earth, but in order that they and theirs may eat the bread which can only be earned by the hard labor which brings sweat. Neither working nor sweating is the chief end of farming: profit is. And if the farmer can gain the end by substituting machinery for his own muscles, he will. Nor is a knowledge of the sciences which relate to agriculture the chief end of farming: it, like work and wagons, is only a necessary means to be used in gaining the real end. As in the case of English and mathematics, so botany, physics, chemistry and zoology may be taught in either of two ways: first, as pure sciences; second, as practically useful to the farmer. In the former case, the student will become a scientist; in the latter, a capable farmer. And often there is as much difference between the two men as there is between a law library and a successful lawyer. Hence, even those sciences which relate most directly to agriculture must be re-arranged and presented to the student with controlling reference to the use he will make of them. So widely different is this use from that which the "man of science" makes that, unless they be so taught, nine graduates will become professors of a given science where one becomes an actual farmer. Experience of those colleges in which these are taught as pure sciences, and to which there is merely an agricultural attachment, will corroborate this statement.

THE INDUSTRIALIST.

SATURDAY, JANUARY 5, 1878.

Several of the old students who returned brought one or more new students with them.

We will send four numbers of the INDUSTRIALIST without charge to any person desiring it.

After you have read this paper, hand it to the next most sensible person of your acquaintance.

New students desiring information respecting boarding, or rooms for "baching," will please address A. A. Stewart.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

Miss Ella Winne is teaching school in the Eureka Bottom, about six miles from Manhattan. She has a number of bright little shavers whose ideas she is teaching how to shoot.

In the rush of an opening term, it is impossible to give the INDUSTRIALIST the attention it always receives at our hands except on the "first week," and our readers will excuse us accordingly.

The students report a vacation full of merry Christmas and happy new-year. They look much better for the two weeks' rest, and will doubtless take hold of their studies with increased vigor.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

The prayer-meeting last night was very interesting. The conversation between Christ and Peter at the sea of Tiberias was the subject considered. New students as well as old are cordially invited to attend.

Frank Quinby observed the holidays by visiting his numerous friends here. We spent Thursday evening with him very pleasantly, talking about old times, old associates, many changes, literary societies, etc. Frank is teaching near Wakefield.

The calendar of the Agricultural College for 1878 will be as follows: The Spring Term will open Thursday, January 3d, and close Wednesday, May 22d. The Fall Term will begin Wednesday, September 4th, and close Wednesday, December 20th.

Persons in Manhattan or the vicinity who desire boarders will please notify A. A. Stewart of the fact, giving the number they can take and prices. Those who have rooms to rent will oblige us by doing likewise, stating number and size of rooms with price per month.

The corn crop the present season, upon the College farm, and in Riley county generally, is fully up to that of last year in quantity, but greatly inferior to last year's crop in quality. The cob is large and kernels small and loosely set. We place the crop of 1877 fully ten per cent inferior to that of 1876 in quality.

Winter weather has come at last; fires are agreeable, the skating is good, the roads solid, and farmers are rolling in their pork, corn and products generally. We wonder how people can live in mud. At Galesburg, Illinois, for three weeks passengers and trunks were hauled to and from the depot in a "stone boat," the mud being so deep that the bus couldn't run. And yet people squish around through such a "kedentry" year after year instead of coming to Kansas.

By next week we will be able to give the time-table for the term. The following one is now in use, but needs a little changing:

First Hour, 8:40 to 9:30.—Logic, English Structure, Practical Agriculture, Practical Horticulture, Drill in Arithmetic, Drawing and the Industrials.

Second Hour, 9:30 to 10:20.—Rhetoric, Agricultural Chemistry, Book-keeping, Drawing and the Industrials.

Third Hour, 10:20 to 11:10.—English Literature, Analytical Chemistry, Zoology, Drawing and the Industrials.

Fourth Hour, 11:10 to 12:00.—Physics, Book-keeping, Drawing and the Industrials.

Fifth Hour, 12:00 to 12:50.—Surveying, Practical Agriculture Industrial, Practical Horticulture industrial, U. S. History, Household Economy, and the Industrials.

Friday, Jan. 4th, Alpha Beta Society was called to order by President Wilson. After the usual devotional exercises, the Society elected the following officers: President, A. A. Stewart; Vice-President, G. A. Gale; Secretary, Miss N. M. Wilson; Treasurer, Miss M. G. Parker; Marshal, H. A. Platt.

The names of Misses Clark, Bouton, Hattie Allen, Alice Allen, and Messrs. Platt, McBratney, Clark, Samuel McNair and John McNair, were proposed for membership. The subject of the debate next meeting is, "Resolved, That the Indian has received more injury from the white man than has the negro." Affirmative, G. H. Perry, G. A. Gale; negative, C. S. McConnell, A. E. Wilson. Essay by Miss Mattie Mails; declamation, Miss Emma Parish; select reading, H. F. Coe.

The *Gleaner* will be presented in two weeks by C. J. Reed and Miss Emma Glossop. After a display of "parliamentary shrewdness" by a number of the members, the Society adjourned. C.

The Webster Society held a special meeting last Wednesday evening. John Mann was appointed President pro tem. After prayer by Mr. Salter, the question respecting the relative merits of the printing press and steam engine was thoroughly discussed. The judges, Messrs. Reeve, Reed and Call rendered a decision in favor of the engine. On motion Mr. Cox was granted a withdrawal card. The Secretary then announced the receipt of the Smithsonian Report for 1876.

The question "Resolved, That the statesman is of more benefit to his country than the warrior," was selected for debate at our regular meeting Saturday evening. The debaters are: L. A. Salter, B. Anderson and C. E. Wood on the affirmative; and A. N. Godfrey, T. Scott and A. Beacham upon the negative. J. A. Bell was appointed to declaim, A. F. Dickson on composition, and J. B. Dickson on select reading.

All students, both ladies and gentlemen, are cordially invited to attend our meetings. G.

The Spring Term of 1878 opened last Thursday at nine o'clock, with a much larger attendance of students than on the first day of the previous term. Studies were at once assigned to the old students. The new ones were examined and the work of assignment completed by three o'clock. On Friday the classes began regular recitations, and over a dozen students reporting that day were assigned. Old students, knowing the time required during the first two days for the assignment of studies and for the examination of new students, are apt to absent themselves until the following week, and many of them are yet to return.

We are glad to note the increased appreciation of the advantages afforded by the College as shown by the localities from which the new students are coming. Those who had never attended the Institution before, and who reported on the first two days were from the following counties or States: Atchison, 1; Allen, 1; Barton, 2; Butler, 1; Clay, 1; Davis, 1; Lyon, 1; McPherson, 2; Nemaha, 1; New York, 1; Ottawa, 2; Riley, 4; Shawnee, 1; Pottawatomie, 1; Wabaunsee, 3. Of these two were sixteen, two were seventeen and the rest eighteen or more years of age.

The term is opening very favorably, and many additional students will yet be received.

Miss May and Amos Wilson, and Bion Smith, students at the Agricultural College, have returned home to spend the holiday vacation.—*Abilene Chronicle*.

Mr. L. A. Salter, son of ex-Lieutenant Gov. Salter, stopped over in town last night on his way from the Agricultural College to his home in Independence.—*Ottawa Journal*.

The next term of the Kansas State Agricultural College, at Manhattan, and the best industrial educational institution in the United States, will begin Thursday, January 3d, 1878.—*North Topeka Times*.

The next term of the Agricultural College, at Manhattan, will begin on Thursday, January 3d, 1878, and close on Wednesday, May 22d, 1878. The Agricultural College is an excellent place for the youths of Kansas to obtain a practical education—an institution that should be liberally supported by the people of the State.—*Leavenworth Press*.

Our Agricultural College has no superior on the continent. There the student, under the guidance of able, practical men, can thoroughly prepare for the active duties of life, and on graduating launch his bark on the great stream of American civil life without fear of being swamped or run down by the more pretentious eastern craft. It is the school for the farmer, mechanic and business man; and as these are they who constitute the mass of our population, the State by its authorities has done wisely in making the Agricultural College a chief object of advancement.—*Alma Blad*.

We note the fact every newspaper in Kansas that aspires to be respectable, is saying a good word for our State institution over at Manhattan. We cannot longer keep silent, for the *Republican* belongs at the front. We don't know anything about the Agricultural College personally, but we do know the President thereof, and to use the language of another, "we know enough to know" that John A. Anderson knows just how to run a first-class college or newspaper, ergo, we are not surprised to learn that in her Agricultural College Kansas can boast one of the best institutions of the kind in the country.—*Valley Republican*.

PRACTICAL EDUCATION.

For the last forty years, there has been a growing sentiment that our higher colleges devote too much of their time to the classics and to abstract knowledge. Hence, Congress in the year 1862 do-

nated land for the establishment of colleges for "the benefit of agricultural and mechanical arts." The question has been under discussion in every State, as to whether or not these institutions should be connected with existing colleges, or be independent. In some of the States, Connecticut for example, the agricultural school has been connected with the Sheffield scientific school of Yale College. In Michigan, Iowa and others they established an independent institution, in no way under the control of the classic colleges. We in Kansas have done the same.

While the cry of retrenchment is so general among the people of our State, there is apprehension that an effort may be made to merge our Agricultural College, now located at Manhattan, with the State University at Lawrence. This movement has frequently been suggested, and it is well for the friends of industrial education to be on their guard. The "new departure," as it has been called, has hosts of enemies to contend with; the "aristocracy of wealth" is as powerful as the "aristocracy of wealth." Seven centuries of classic learning will not witness with indifference any innovations made on their mode of instruction. Now and then we find one who stands forth and proclaims his opinions,—Dr. Hitchcock, of Amherst College, is decidedly in favor of independent institutions.

We cannot, in these notes, enter into the pros and cons of this question, they are too numerous; but the most prominent reason why these colleges should act independently is, that agricultural knowledge can only be obtained by constantly testing in the field the theories of the school-room. The idea that labor is degrading is (though not designedly) fostered by setting apart, in our ordinary colleges, an educated class who are not workers, and who from superior education occupy high professional positions.—*James Hanway, in Kansas Farmer*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is

purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.
Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.
Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

Gardening for Profit.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

School District, Township and County Bonds.—District Boards, Township Officers, and County Commissioners are invited to correspond with us before negotiating elsewhere, as we always pay the highest market price. Address, E. Gale, Loan Commissioner, Manhattan, Kansas.

Educational Calendar.—A wide-awake, spicy, newsy, Kansas paper for the Officers, Teachers and Patrons of Kansas schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the INDUSTRIALIST. Geo. W. Martin, Topeka.

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange is sued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects injurious to the Kansas Farmer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Agricultural College Lands.—These lands are in the market, as provided by law, and for sale for one-eighth cash, balance in seven equal annual payments with ten per cent interest, payable annually. The lands are all choice selections, and prices range generally from \$5.00 to \$6.25 per acre. Some of the best tracts are appraised at from \$8 to \$10 per acre, and they are well worth the money. These lands are located in Washington, Marshall, Clay, Riley and Dickinson counties. For particulars, maps and descriptions, address L. R. Elliott, Agent, Manhattan, Kansas.

THE INDUSTRIALIST.

SATURDAY, JANUARY 5, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.— *Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault of either the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*North Topeka Times*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Tribune*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courier*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

The Educational Weekly.—The union of the School Bulletin and N. W. Journal of Education, Wisconsin; the Michigan Teacher, Michigan; the Illinois Schoolmaster, Illinois; the Nebraska Teacher, Nebraska; The School, Michigan; Home and School, Kentucky; The School Reporter, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

The strongest consolidation of educational journals ever effected in this country. The broadest in its scope; the handsomest in appearance; the most varied in its contents; the freshest, strongest and latest of the journals of its class. Good for the teacher! Good for the scholar! Good for the citizen! Every department is in the hands of a special editor. Its "Practical Hints and Exercises" are invaluable to the teacher of any grade.

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To single subscribers 1 year, \$2.50; 6 months, \$1.50. In clubs of five..... " 2.00; " 1.25. Clubs of ten or more " 1.50; " 1.00.

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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor THE PRACTICAL TEACHER. The subscription price will be one dollar per year, in advance, or 75 cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, THE PRACTICAL TEACHER, 170 Madison St., Chicago.

KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular work-shop of his trade

THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, JANUARY 12, 1878.

No. 39.

THE INDUSTRIALIST.

Published every Saturday by the
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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits" as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13—1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, forgiving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Are our Schools a Failure?

A correspondent of the *Commonwealth* again introduces the "school question" to the public attention by the pertinent question, "Are our schools a failure?" He emphatically answers "No" and attempts, in a labored argument, to prove them a success. While we have not the slightest interest in this local controversy, yet the question above quoted involves principles which deserve more than a passing notice.

That we have many teachers and superintendents who are keenly alive to the practical needs of their pupils, and who strive and succeed in making their school-rooms intellectual workshops, all must admit. But that the majority of the public schools are not of this character, such extracts as the following from the public press abundantly prove.

At the last examination at West Point, candidates were required to be "well versed in arithmetic, reading and writing, including orthography, and have a knowledge of the elements of English grammar, of descriptive geography, especially of their own country, and of the history of the United States." At the examination, last year, of a hundred and more picked men, of from fourteen to twenty-one years of age, chosen from all parts of the country, and not a few of them by competitive examination in the public schools, only one-half were found to have that thorough grounding in the elements of an English education which our schools profess to give. No doubt many of these rejected candidates could have answered difficult questions in algebra, geometry or Latin, but these questions were not put to them; consequently they failed. So many in the test of practical life, who may have spent years in the school-room in the acquisition of abstract science only to forget it, find when too late that they fail, and are obliged to begin their education over again. Let teachers and school directors ponder upon this fact.

We clip the following from a leading Illinois paper:

"It is a fact that the rudiments of an education are shamefully neglected in most schools. The three 'R's' are ignored, and too much attention paid to algebra, elocution, mental arithmetic, and ornamental branches. One views with alarm the precocity of some of the little ones, and yet they are very often unable to solve a simple problem, such as might be used in purchasing a supply of groceries, but can rattle off with ease anything in the mental arithmetic."

J. D. Walters, in the *INDUSTRIALIST*, says:

"One appeal after another for a more rational and practical education is howled down by the petrified infallibilities of ancient school-mastery with the cry, 'Cramming?' If the pupils are kept at spelling, arithmetic, geography and grammar—the old recognized curriculum—it is supposed by many that the evil will be avoided. The principles of natural sciences, drawing and book-keeping, however, could not be taught in the common school without cramming. This is the prevailing sentiment. Yet, what is it but cramming, if we compel pupils to spell fifteen or twenty thousand words without heeding the laws of orthography, when there is but little chance that one pupil out of fifty will have occasion, in all his after-life, to write above four thousand of them, and those the most common? What is it but cramming, if we compel pupils to memorize, and that, too, with little reference to generalization, from twenty to forty thousand facts in geography, when it is well known that not more than one-tenth of these facts will be remembered, or would be of any use if they were? What is it but cramming, if we compel the pupils to memorize whole grammars and repeat them verbatim, while their discriminating powers are not equal to the comprehension of one-quarter of what they repeat? Stuffing in its worst form is generally found where the fewest studies are pursued. Enough time is often wasted there in spelling words—abracadabras to the pupils as to significance—to give them, if their energies were properly directed, a rational start in book-keeping or industrial drawing."

In confirmation of the truth of the above, we happen to know of a town in Kansas, in the enjoyment of a good system of graded schools, the superintendent and school board of which refused to allow boys fourteen years of age the privilege of studying book-keeping, because they had not completed the subjects of arithmetic, grammar and geography, and thus under the rules could be candidates for admission to the high school, in which book-keeping was taught. The reasons offered were that the grammar schools had already too many studies, and another

branch could not possibly be introduced. It is probable that a majority of these boys will never be able to enter, to say nothing of graduating from the high school, for by the last report less than three per cent of the pupils are found in the high school, and less than one-third of one per cent are among the graduates.—*Educational Calendar*.

Sense and Classics.

Education should represent the existing state of knowledge. But in America this golden rule is disregarded, especially in the case of the higher establishments. What is termed classical learning arrogates to itself a space that excludes much more important things. It finds means to appropriate, practically, all collegiate honors. This evil has arisen from the circumstance that our system was imported from England. It is a remnant of the tone of thought of that country in the sixteenth century; meritorious enough and justifiable enough in that day, but obsolete in this. The vague impression to which I have above referred, that such pursuits impart a training to the mind has long sustained this inappropriate course. It also finds an excuse in its alleged power of communicating the wisdom of past ages. The grand depositories of human knowledge are not the ancient, but the modern tongues. Few, if any, are the facts worth knowing that are to be exclusively obtained by a knowledge of Latin and Greek; and as to mental discipline, it might reasonably be inquired how much a youth will secure by translating daily a few good sentences of Latin and Greek into bad and broken English. So far as a preparation is required for the subsequent struggles and conflicts of life—for discerning the intentions and meeting the rivalries of competitors—for skill to design movements and carry them out with success—for cultivating a clearness of perception into the character and motives of others, and for imparting a decision to our own actions—so far as these things are concerned, an ingenious man would have no difficulty in maintaining the amusing affirmation that more might be gained from a mastery of the game of chess than by translating all the Greek and Latin authors in the world.—*Extract from Thoughts on the Future Civil Policy of America*, by John William Draper, M. D., LL. D.

Fallacies.

It is fallacy to think that the more a person eats, the healthier and stronger he will become, or that the more a child commits to memory at school, the more thorough will be its education; that it is beneficial to eat without an appetite, or that it is profitable to force a child to learn a lesson in which he has no interest and which he does not understand; to conclude that because exercise is healthful and develops strength, the more violent and exhausting it becomes the greater will be the benefit received, or that the more hours a child spends in study the faster it will improve.

It is a fallacy to suppose that every hour taken from sleep is an hour gained, or that every hour taken from the play or recreation of a child and spent by him in study or work is a profitable investment, to expect that a mechanic can do good work without learning a trade, or that a teacher can teach a good school without any special preparation.—*Educational Calendar*.

SOMEBOODY has been quoting Harvard College, as a place for intellectual discipline and drill, to Prof. Greenwood, Superintendent of Public Schools in Kansas City. He replies:

"Since Harvard was referred to, I will make a statement. I have heard classes recite in Harvard, and also public schools in Boston, and no one will pretend to say that there is any comparison between the two. The dullest, the most stupid, fossilized recitations I ever heard in college or university, I heard in Harvard in 1874."—*Lawrence Journal*.

An Idea Growing.

"Our School Journal" is the name of a nicely-printed and very interesting paper, about the size of the *Calendar*, published by the pupils of the graded school of Columbus. In its salutatory, it strikes right home, as follows:

"Practical exercises in composition, is the term we choose to apply to our students' labor in the editorial field. We believe this will be one of the most useful drills to the pupils that could be devised; for, besides the advantages derived from the ordinary lessons in the use of language, it is calculated to make them more careful, critical and confident."

We were thoroughly conversant with the inception and birth of the *INDUSTRIALIST*, published at the State Agricultural College, but could not hope then that at so early a day the idea of its publication would expand to such an extent as it has already in Kansas. There is the *Union Public Schools Review*, at Neosho Falls; the *School Galaxy*, at Marion Center; the *Broad-Axe*, at Parsons; the *Kansas Star*, at the Deaf and Dumb Asylum; and now we have. *Our School Journal*, at Columbus—all done either by or for the benefit of the pupils.—*Educational Calendar*.

Prentis' Lecture.

Prentis is having great success with his lecture in all the large towns in the State. Prouty in the Junction *Union* suggests the wish that Prentis could deliver it among the literati of Boston. He said it would fairly tickle to death the staid old Yankees and Harvard graduates. The lecture is, indeed, full of the most delightful humor, but that is not, in our opinion, its strong point. Its inimitable descriptions, its richness in sentiment, its keen practical philosophy, and its constant undercurrent of manly American spirit, make it one of the finest productions that has been put upon the lecture platform for a long time.—*Lawrence Journal*.

M. BARDOUX, the new French Minister of Education, finds that of the 8,736,281 persons in France between six and twenty years of age, only 5,728,818 are able to read and write. He proposes to remedy this, if possible, and as one of the first measures of the Republican administration has introduced a bill authorizing gratuitous elementary instruction. It is intimated that the new Ministry will soon submit a proposition to add \$20,000,000 to the appropriation for education.

THE Kansas State Grange adopted the following resolution at its last meeting:

"Resolved, That the State Grange Educational Committee be instructed to devise a course of systematic educational work for the use of the subordinate granges; and, as far as practicable, to organize such work in the granges throughout the State."

The committee appointed for the ensuing year is as follows: F. G. Adams, Topeka; E. M. Shelton, Manhattan; and S. A. Felter, Topeka.

THE internal revenue paid the general government by citizens of Kansas during the fiscal year ending June 30th, 1877, amounted to a total of \$139,527. Of this amount, \$35,441 was on spirits, \$55,295 on tobacco, \$26,010 on fermented liquors, \$12,674 from banks and bankers, \$95 penalties, and \$10 miscellaneous. For the year ending June 30th, 1875, the receipts from Kansas aggregated \$133,685, and for 1876 they aggregated \$150,604.

DURING the forty-eight hours ending on Wednesday evening last, there were received at the Union Stock Yards, Chicago, about 120,000 hogs—the largest number ever received in any market during the same length of time. The value of these animals is about \$1,320,000. The aggregate weight is about 32,000,000 pounds.—*Atchison Champion*.

KANSAS has sixty cheese factories. It is said they are making handsome profits for the capital invested.

THE INDUSTRIALIST.

SATURDAY, JANUARY 12, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THOSE who had the pleasure of hearing the famous Commencement oration delivered by Noble L. Prentis on "The World a School," can readily anticipate the blending of humor, sense and beauty which makes his lectures on England, Ireland and Scotland so attractive.

THE last number of the *Farmer* contains the following notice of two frequent contributors to the *INDUSTRIALIST*, by Mr. A. G. Chase, the old-time editor of the *Farmer*:

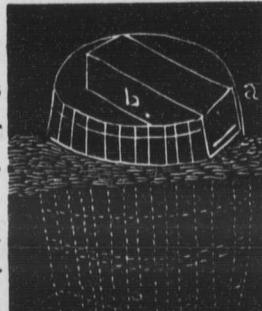
"Then right by the side of his article appears another by Prof. Gale, than whom in his line none can interest or instruct more perfectly. Turn to the next page and we have another from Prof. Shelton. I have not the honor of a personal acquaintance with this gentleman, but I read his articles with pleasure, for they are always based on good, hard, common sense. All three of these writers live at Manhattan, the home of our Agricultural College."

STUDENTS have been coming in rapidly since our last issue, twenty-one having been assigned during the week, of whom seven were present at this last term and fourteen are new. They are from the following counties: Atchison, one; Clay, six; Cloud, one; Dickinson, one; Ellsworth, one; Franklin, one; Johnson, one; Leavenworth, one; Marshall, one; Mitchell, two; Pottawatomie, one; and Riley, four, of whom one is from Manhattan. The fact that citizens of other counties, as well as of the county in which the College is situated, are availing themselves of the advantages of the Institution is especially notable and encouraging.

THE Agricultural College is doing the square thing for the industrial classes. It furnishes a thorough and practical scientific education, exactly and fully adapted to the necessities of business life, whether on the farm, in the shop, store, or office; it furnishes facilities for acquiring the manual dexterity required in the several vocations; it charges no tuition or contingent fees; and it has enough work to do, and pays enough for having it done, to enable any industrious boy to earn the half or the whole of his expenses. In doing all these things, it does all that can reasonably be expected of it; and as its methods and facilities become more generally known, they will be fully appreciated.

The Omnibus Rabbit Trap.

This trap merits the above name because, like the proverbial omnibus, it is never full, being always at all seasons ready to take in one more. We are indebted to Mr. J. S. Williams, of Oswego, for a description of this trap, given at a late meeting of the State Horticultural Society. It consists of a common barrel and a box without ends, five or six inches square and long enough to reach across the end of the barrel. The bottom of this box is hung upon pivots at *b*, one-third of the way from the front end. The short end of this board has a weight fastened to the under side, so that it will always retain the horizontal position when undisturbed. This box is then let into the top of the barrel by sawing out the staves on one side, so that the top of the box will be just level with the top of the barrel, as seen at *a*. The bottom of the box



should rest upon the staves, so that the front end will remain firm, while the inner end will fall with the least pressure. The front end of the box will remain open, while the opposite end will be closed by the staves of the barrel. Whenever any creature enters the box, the pressure upon the inner end of the bottom closes the opening at *a*, leaving no way of egress but into the barrel.

Having prepared the trap, let the barrel into the ground as represented in the figure, where it can remain undisturbed. Cover the top of the barrel with boards, and if convenient let them project a little over the open end of the box. Put several of these barrels down about the premises, and give the boys the bounty on the rabbits caught. If this matter is carefully attended to, you will have little more trouble with these pests of the orchard and garden. It will be well to remember, however, if you have any inclination to visit the traps in the night, that a happy family of rabbits, cats and skunks sometimes get in together.—*Prof. Gale.*

Hints on Decoration. No. I.

Mohammed said in the Koran: "God has sent me against three classes of men, to annihilate and confound them: these are the proud, the polytheists, and the painters. Beware of representing God or man, and paint only trees, flowers and inanimate objects." A certain class of Christians could greatly improve themselves in following this injunction, superstitious as it is. It is seldom that the human figure can be used to advantage in decoration; nevertheless there is among modern designers a growing tendency to press it into service, and that, too, in a manner which is degrading. We daily see the human figure in one costume or another, and often in no costume at all, supporting lamps and clocks, carrying candlesticks, serving as a handle to water pitchers, arms to chairs, and many other such purposes foreign to its proper dignity. Not unfrequently we find parlor carpets with patterns representing hunting and other scenes exhibiting multitudes of human and animal figures. The first step you risk among the happy, pictured family will bring your heel right square down on some face. To be sure it does not hurt it, but the idea is nevertheless of a tender and elevating nature. Smoking pipes are made to imitate human heads, the uglier the better. Sometimes, too, the eyes are made to roll, exhibiting the poor creatures as in everlasting agony. The carnival culminates in innumerable but nowadays fashionable store signs of every description, representing the "image of God" in all imaginable positions, attitudes and occupations.

Diderot, when gazing upon the celebrated historical clock made by Falconet, very happily criticised this tendency by saying that the three figures which supported the clock showed most everything except what they might show with proper dignity—the hour. It has been said that this usage was fostered—if not created—by the unearthing in modern times of statuary in Greece and Italy, whose ancient inhabitants used the human figure very frequently to decorate their temples and other architectural structures. If this is true, we play here the part of the second part in "Watch-maker and Monkey" admirably well. If the true mission of art is to elevate and idealize, such vulgar art as described must be condemned.

—*J. D. Walters.*

Sheep-Raising Again.

Something over a year ago, the writer made a somewhat extended investigation concerning the subject named at the head of this article. We commenced this inquiry

by opening a correspondence with every sheep-raiser whose address could be obtained, and the result appeared in the *INDUSTRIALIST* in the form of a half-dozen short articles headed "Sheep-Raising in Kansas." The result was a great surprise even to us who had formed a most favorable and—we are now certain—not exaggerated opinion of Kansas as a wool and mutton-growing country. Of the twenty odd sheep-raisers whom we interrogated, not one but that expressed himself entirely satisfied with the trial he had given; and some gave facts and figures showing profits that probably could be equalled in no other branch of legitimate agriculture.

Since that time we have kept a close watch upon this—in our State—almost unoccupied agricultural field, and everything we have learned since has fully confirmed us in the view then taken. Not long since we met a very intelligent farmer who has followed sheep-raising in the western part of the State for three years, and he was positive in the statement that his herd has netted him fifty per cent on the capital every year he has been in the business.

We have also heard of a few failures, but every failure that has yet come to our notice has been made by one of three classes of experimenters: First, by men holding the "Italian climate" theory and making provision for winter accordingly; second, men who have been careless in selecting their "plant," purchasing culs, "broken-mouthed" and scabby sheep, and bringing them into the State in the fall, or late summer; third, wealthy enthusiasts who have entrusted their herds wholly to faithless hired men.

When in Abilene a week ago, we learned some facts of great importance to the farmers of the State concerning Messrs. Henry & Vandermark, in sheep feeding. These gentlemen with characteristic enterprise introduced during the past fall some five thousand grade Cotswolds from southern Colorado, with the sole object of feeding them for mutton. From Mr. Vandermark, who by the by is a careful and experienced sheep-raiser, we obtained the following interesting particulars. These five thousand sheep cost just two dollars per head laid down in Abilene, and other parties who carefully examined the herd assure us that these sheep will average fully one hundred pounds each in weight. Thus far the losses have been nothing, the herd being remarkably healthy and feeding rapidly. This last would be inferred from the fact that they already consume two pounds of corn per head each day.

Those parties who insist so strenuously that Colorado sheep will not eat corn, will do well to stick a pin through this last fact. Mr. Vandermark has so thoroughly systematized the labor attending this great herd that four men easily perform all the labor in feeding and caring for it.

We shall look to the outcome of this experiment with exceeding interest, although to judge from Kansas City prices only one result seems possible. It looks now as though Abilene, after teaching the whole State how to grow wheat, was going to give us an equally valuable lesson in sheep-raising.—*Prof. Shelton.*

Southeastern Kansas Teachers' Association, Parsons, Dec. 27th, 1877.

The teachers of southeastern Kansas convened at Parsons, Dec. 25th, 1877, pursuant to an adjournment of said teachers at Chanute, held December, 1876.

The meeting was organized by electing L. M. Knowles, of Independence, President, and M. Chidester, of Parsons, Secretary.

The President then set forth the objects of the meeting to be the following:

- 1st. To effect a permanent organization.
- 2d. To co-operate with the State Teachers' Association.
- 3d. To elevate the profession of teaching.
- 4th. To advance the interests of schools.
- 5th. To disseminate educational intelligence.

The following were appointed a committee on permanent organization: Dan Matthews, of Fort Scott; M. Chidester, of Parsons; J. B. Hoover, of Oswego.

The following subjects were discussed at the various sessions of the Association: "Methods of Teaching Primary Reading," "Relations between Parent, Teacher and Pupil," "How Arithmetic should be Taught in our Common Schools," "Methods of Teaching Spelling," "Multiplicity of Classes in our County Schools," "Language in the District Schools," "Should the District Furnish the Text-Books?" "Unity of Work in Country Schools," and "School Supervision."

Two classes of the Parsons schools were present by invitation, on the 27th, and class drills were given to illustrate methods of teaching.

The following resolutions, on defects in the school laws, were reported by the committee appointed for the purpose, and adopted:

Resolved, 1st, That in the opinion of this Association there are imperfections in the school laws of Kansas that render it desirable that amendments should be made at an early date.

2d, That there should be a definite law requiring school boards to provide text-books for the use of the whole school, and that failure to do so should incur a forfeiture of a portion of the State dividend.

3d, That the law relating to compulsory attendance should be made effective by making the State dividend depend on the average attendance, rather than upon the gross number of children of school age.

4th, That the length of the school term required to be held in each district before the State dividend can be obtained, should be increased to six months, except in new districts.

5th, That the time of suspension of persistently disobedient pupils should not be limited, but that proper acknowledgment of the wrong done should be required before restoration.

6th, That the duties of county superintendents should be primarily the efficient supervision of the district schools, that the qualifications for that office should be those required for a State certificate, and that the salary should be restored to what it was under the old law.

7th, That physiology ought to be included in the branches for an A grade certificate, and that geology should not be limited.

8th, That teachers should be required to register the standing, based on a careful examination of each pupil at the close of every term of school, before receiving their last month's wages.

ROBERT HAY,
MISS MARY A. HIGBEY,
MRS. J. R. HOOVER,
E. H. TAYLOR, Committee.

The following report of the committee on general resolutions was adopted:

Resolved, 1st, That too much time is devoted to arithmetic to the neglect of other branches.

2d, That the proper use of oral and written language should be taught before a text-book on grammar is used.

3d, That as soon as a pupil has learned to write, both oral and written spelling should be taught.

4th, That the present tendency being to reduce the efficiency of schools and compensation of teachers by licensing incompetent instructors, examining boards are requested to raise the standard of qualifications.

5th, That we heartily endorse the system of "Normal Institutes" established by the Kansas Legislature of 1876.

6th, That the thanks of this Association are due and hereby tendered to L. M. Knowles for the able manner in which he presided; to M. Chidester for the efficient performance of the duties of Secretary, and for furnishing copies of programme to the Association; to the Board of Education for furnishing building and fuel; and to the proprietors of hotels for entertainment at reduced rates.

7th, That a synopsis of the proceedings of this Association, including a copy of these resolutions, be furnished by the Secretary to one newspaper in each of the following counties: Allen, Bourbon, Cherokee, Crawford, Labette, Montgomery, Neosho, Wilson and Woodson; also to the *Educational Calendar*, the *INDUSTRIALIST*, and to the press of this city.

JAMES GRIMES,
J. B. HOOVER,
J. E. HALSTED, Committee.

The committee on permanent organization reported a constitution which was adopted and signed by the members, after which the following officers were elected for the ensuing year: President, L. M. Knowles; Vice-President, Miss M. A. Higbey; Secretary, M. Chidester; Treasurer, J. B. Hoover. Executive Committee—Dan Matthews, Robert Hays, James Grimes.

L. M. Knowles and M. A. Higbey were appointed to present the foregoing resolutions at the next meeting of the State Teachers' Association.

The Association then adjourned to meet at Chanute, December 26th, 1878.

M. CHIDESTER, Secretary.

THE INDUSTRIALIST.

SATURDAY, JANUARY 12, 1878.

The students' prayer-meeting last night was pleasant and well attended.

Sometimes the thought dreamily steals itself through us that may be A. A. Stewart is—

Next Monday Mr. A. A. Stewart will have tickets to Prentis' lecture for sale to students at special rates.

As we go to press two new students have arrived, one from Franklin county and one from Jewell, making the number received this week twenty-three.

The increased attendance of students has necessitated the division of several classes. There are now two "sections" of English Structure, two of Book-keeping, and two of United States History.

No lecture delivered in Kansas for years has been so highly spoken of by the press as the one which Prentis will give in Manhattan next Tuesday evening. Those who miss it will miss a treat.

Contractors can sharpen their pencils preparatory to figuring up their bids for the erection of the new Agricultural Building. Mr. E. T. Carr is at work on the final drawings and specifications, which will be ready in a couple of weeks.

The Drill Club met Thursday evening and had an amusing time in the election of officers and "pints of order" generally. Result: Geo. A. Gale, President; A. A. Stewart, Secretary; A. E. Wilson, Marshal; and A. N. Godfrey, Treasurer.

Mr. C. H. Torrington, an experienced operator and brother of Mr. Torrington, Superintendent of the A. T. & S. F. R. telegraph line, has arrived to take charge of the College Telegraph Department during Mr. W. C. Stewart's absence. W. C. is general agent for the Bell Telephone Company in Kansas and Nebraska.

One of our old students, J. E. Williamson, is taking quite an active part in Jefferson county educational affairs. He has lately written a lengthy article for the Oskaloosa *Independent* showing the importance of book-keeping in district schools, and is advertised to speak on "Orthography" at the Grantville Teachers' Association. Mr. Williamson is a very sensible and studious young man.

The time-table of recitations has gotten itself settled for the term, and is as follows:

First hour.—English Structure, Practical Agriculture, Practical Horticulture, Drill in Arithmetic, Drawing, and the several Industrials.

Second hour.—Logic, Rhetoric, Physics, Book-keeping, Drawing and Industrials.

Third hour.—English Literature, Analytical Chemistry, U. S. History, Zoology, Drill in English, Drawing and Industrials.

Fourth hour.—English Structure, Meteorology, Book-keeping, Drawing and Industrials.

Fifth hour.—Surveying, Practical Agriculture Industrial, Practical Horticulture Industrial, U. S. History, Household Economy and Industrials.

We learn that the Bell Telephone Company now have in course of erection a number of lines in various parts of the country along the different railways—not exceeding one hundred miles with not more than twenty offices. They also have extensions from railway stations to points lying off the line of railways; and, as an accessory to these extensive preparations, they have under rapid headway a system which they style the District Bell Telephone Company. We learn that this will be managed in a style similar to that of the American District Telegraph Company, which is now a leading success in the eastern cities, its object being to have the power, by means of instant communication, to call at any time assistance of any kind. This will be especially useful in cases of fire, suffering, sickness, or at any time when a delay might prove fatal.

The indications show that the telephone is rapidly growing into public favor, and from our observation and knowledge of this wonderful invention, we are led to believe that this instrument will eventually supersede all other means of communication.

ENTERPRISE ITEMS.

Henry Patee has returned home.

Miss Fairy Whiting, who has been visiting in this city during the holidays, goes to Clay Center to-day.

A son of Dr. Detmers, of Bellegarde, killed a deer the other day that weighed 250 pounds. It is the largest ever seen in that section.

From all reports, Prentis' lecture on Europe is an excellent one. Mr. P. is an educated gentleman and an entertaining speaker. He will, no doubt, have a good house.

Col. H. H. Stanton will take charge of the Palace Hotel at Topeka as soon as finished. He is probably the best hotel manager in Kansas, and will give first-class accommodations, and will make money out of that stand if any man can.

Ex-Gov. Green registered on the *Enterprise* books one of the coldest days of last week. He says he has fed about four thousand bushels of corn this season, and has to show for it sixty head of fat cattle and one hundred and seventy-five head of fat hogs. This is the way that Gov. Green farms.

THE POOR MAN'S TELEPHONE.

We are the mangled victim of crushing poverty. A once noble form, bounding in high-heeled vigor and nine-button gloves, with its gold-mounted, single-barreled eye-glass, and its raven locks enthusiastically parted in the middle, lies squashed and quivering beneath an avalanche of things it wants but can't pay for. To say nothing of a palatial residence, a fifty thousand dollar yacht, or a hundred thousand dollar income, we haven't even a twenty-five dollar set of magnetic telephones; and, in bleeding desperation, are reduced to two tin cans and a string.

The idea that an American citizen who desires to talk to a fellow sovereign a thousand feet distant, must either forego the exercise of free speech or else tramp over to the building where his other majesty happens to be, is not only abhorrent to all just notions of both liberty and laziness, but is enough to make the national bird tilt back on his hind legs and screech like a fog-horn. Shall such ruthless tyranny be openly practiced in the heart of the American continent, and in the very focus of the noon-day blaze of the nineteenth century, while a free people gnash their teeth in despair and the crowned heads of Europe, tremulant with ecstasy, applaudingly predict the downfall of this glorious Republic? No! fellow-citizens, no!!—not so long as empty tin cans and strings are lying around loose.

Slightly in the "interest of science" and chiefly to aid the mangled victims of poverty, we have this week put up two lines of the poor man's telephone, one three hundred and the other six hundred feet long, the latter running from the President's office in the College to the printing-office in the Mechanical building. The line consists of twenty cents' worth of "bride thread," and the apparatus of two tin cans about four inches in diameter, one end of each being covered with a piece of parchment put on wet and drying itself tight. A small hole through the center of the parchment receives the thread and a knot holds it. The line should be supported by loops of thread a yard long, and must not touch anything else. The cheapest way of making the instruments is to knock the bottom out of an empty "baking powder" can and then wait till the brass band parades. Accidentally kick a hole through the "snare" drum head, and persuade the enraged drummer to give you the busted skin as a reward for your sorrow. Cut out a piece an inch greater in diameter than the diameter of the can; soak the piece a few minutes; tie it on the can securely and let it dry. You will be happy. We can talk over our lines with perfect ease, and see no reason why the toy which has been on the market for a year should not be made to save steps and time. Unless protected from rain, the parchment will not work in wet weather—but thin tin will.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in

order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

MANHATTAN NEWSPAPERS.

THE ENTERPRISE.—A. L. Runyan, Editor and Proprietor. Published every Wednesday. Send for sample copy.

THE NATIONALIST.—Albert Griffin, Editor and Proprietor. Published every Friday. Send for sample copy.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

A. A. STEWART, President.

MISS NENA M. WILSON, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

BERNHARD ANDERSON, President.

CLARENCE E. WOOD, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.

Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.

Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending January 10th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.
	Max.	Min.	Mean.	
Friday.....	427°	0°	21°	28.99
Saturday.....	527	2	25	29.19
Sunday.....	626	3	15.75	29.19
Monday.....	738	15	31.50	28.91
Tuesday.....	840	29	37	28.85
Wednesday.....	955	20	42.25	28.64
Thursday.....	1045	24	32.50	28.69

Average temperature for the week, 28°.75.

Range of temperature for the week, 55°.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 10 A. M.; Mrs. A. D. Goodwin, Sup't.

CONGREGATIONAL.—Rev. R. D. Parker, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. J. E. Platt, Superintendent.

EPISCOPAL.—Rev. J. H. Lee, Pastor. Service at 11 A. M. every Sabbath. Sabbath School immediately after service; Rev. J. H. Lee, Sup't.

FIRST METHODIST.—Rev. R. Wake, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; L. R. Elliott, Superintendent.

SECOND METHODIST (colored).—Rev. J. S. Griffin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 3 P. M.

PRESBYTERIAN.—Rev. Wm. Campbell, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Rev. Wm. Campbell, Sup't.

H. S. Roberts, M. D.—Office south side of Poyntz Avenue, between Third and Fourth streets. Residence corner of Third and Pierre streets. 16

Bookseller and Stationer.—S. M. Fox

THE INDUSTRIALIST.

SATURDAY, JANUARY 12, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

In winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

The place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

In making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

THE COMMONWEALTH.

PROSPECTUS FOR 1878.

In making our announcement for a new year, we have little to add to or take from previous statements of our plans and purposes. The policy pursued under the present management has been met by a measure of success which is at once the amplest indication of the past and the surest guarantee for the future. We shall continue to act upon the theory that the first function of a newspaper is

TO GIVE THE NEWS,

and no pains or expense will be spared in securing the largest and fullest intelligence from all quarters, particular reference being had at all times to matters in which Kansas readers are directly and chiefly concerned. Our location gives us unsurpassed facilities for gathering fresh and reliable facts relating to State affairs; and we have correspondents at all the principal towns south and west of us. We shall also, as heretofore, pay special attention to the collection of news from our State exchanges, and shall aim, in short, to give

A SUCCINCT DAILY HISTORY

of the politics, industry and general moral and material progress of Kansas.

In our editorial dealings with the vital issues of the time, we shall continue to fly the republican flag, without crease or stain. We believe that the safety and welfare of the country depend upon principles, and not men—upon justice, and not jugglery. We believe it was the loyalists, and not the rebels, who came off victors in the late civil war, and that peace and prosperity are to be preserved and promoted by

KEEPING THE FAITH

to which we are indebted for a preserved Union and the extirpation of the curse and blight of slavery. While earnestly desiring a speedy and complete restoration of fraternal feeling between the north and south, we do not believe in seeking that end through any surrender or compromise of the plain demands of right and truth. We believe that the 'good works' of repentance should be performed and not merely promised, and that any form of conciliation which involves a bribe for good behavior is but a cheat and a snare. So believing, we shall do all in our power to prevent the threatened restoration of

THE BOURBON DEMOCRACY

to the control of affairs, not only because of its shameful record during the war, but also on account of its numerous and pronounced heresies in matters of currency, taxation and subsidies. We shall also adhere to our advocacy of

THE HONEST DOLLAR,

and our opposition to all schemes and tricks for enlarging the present volume of irredeemable paper currency, or for defeating or postponing the prompt resumption of specie payments at the time and in the manner prescribed by law.

In the matter of State politics, we shall pursue the even tenor of the way we have heretofore followed—treating all men and all sides with

CANDOR AND FAIRNESS,

and aiming always to do that which seems to be best for the State without regard to the personal fortunes of any men or set of men.

Our correspondence and special contributions, which have attracted so much attention and won so much favor the past year, will continue to be

A MARKED FEATURE.

In the files of the *Commonwealth* may be found

A HISTORY OF THE STATE GOVERNMENT

in every department, executive, legislative and judicial. The syllabi of decisions of the Supreme Court are published in the *Commonwealth* by authority.

Especial attention is directed to the

WEEKLY COMMONWEALTH,

a forty-column paper, with few advertisements, and containing all the reading matter that appears in six issues of the daily.

TERMS:

Weekly, three months, 50 cents; six months, \$1; one year, \$2.00. It is always stopped when the time for which it is paid expires. Daily, \$10.00 per year.

Specimen copies sent free upon application, Address, F. P. BAKER & SONS, Topeka, Kansas.

Telegraphy.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

Vocal Music.—Regular instruction and drill in the science and art of vocal music, without charge. Recitations in these classes are not reckoned as an "industrial."

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

Dress-Making and Millinery.—Daily instruction and drill in hand and machine sewing; cutting, fitting and making dresses; and all branches of millinery, by a practical teacher.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture.

The Farm Department offers for sale YOUNG SHORT-HORN BULLS of the highest breeding, together with JERSEYS and GALLOWAYS. Also, a very fine lot of BERKSHIRE PIGS, eligible to record and the get of the celebrated boars *Lord Liverpool* and *British Sovereign II*. We have also for sale a few choice ESSEX PIGS, straight Jos. Harris stock, of both sexes. Our prices place this stock within reach of the general farmer. Address EDWARD M. SHELTON, Sup't Farm, Manhattan, Kansas. (11-tf)

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact.

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas. 8-tf

The Kansas Publishing House.—A Kansas institution. Celebrated for Kansas productions. The only Kansas House to secure a Centennial award for quality of work. Kansas work, by Kansas mechanics, at this Kansas establishment. Pronounced "faultless."—Felter's series of School Records, made to comply with Kansas laws by a Kansas author and Kansas publisher. The best School Officers' Records in the market.—Felter's Elements of Book-keeping. The first Kansas text-book by a Kansas author and a Kansas publisher. Being rapidly adopted by the schools.—The Annals of Kansas, a marvellous history of Kansas, written and printed in Kansas.—The Educational Calendar, a beautiful monthly publication for the Officers, Teachers and Patrons of Kansas schools, for twenty-five cents per annum.—The best Railroad, County, Bank and Mercantile Blank Book work to be had anywhere, all done by Kansas mechanics. Our ambition is to build an establishment for Kansas equal to the best in America. Address. GEO. W. MARTIN, Topeka, Kas.

The Educational Weekly.—The union of the School Bulletin and *N. W. Journal of Education*, Wisconsin; the *Michigan Teacher*, Michigan; the *Illinois Schoolmaster*, Illinois; the *Nebraska Teacher*, Nebraska; *The School*, Michigan; *Home and School*, Kentucky; *The School Reporter*, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

The strongest consolidation of educational journals ever effected in this country. The broadest in its scope; the handsomest in appearance; the most varied in its contents; the freshest, strongest and latest of the journals of its class. Good for the teacher! Good for the scholar! Good for the citizen! Every department is in the hands of a special editor. Its "Practical Hints and Exercises" are invaluable to the teacher of any grade.

TERMS OF SUBSCRIPTION.

To single subscribers 1 year, \$2.50; 6 months, \$1.50. In clubs of five..... " 2.00; " 1.25. Clubs of ten or more " 1.50; " 1.00.

To new subscribers, three months on trial, fifty cents. Send ten cents for specimen copy to S. R. Winchell & Co., Publishers, 170 Madison street, Chicago, Ill.

ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor *THE PRACTICAL TEACHER*. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, *THE PRACTICAL TEACHER*, 170 Madison St., Chicago. 38-4w

KANSAS STATE AGRICULTURAL COLLEGE.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zo

THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, JANUARY 19, 1878.

No. 40.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Ten cents per month, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription. Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers	1.13
Professional education:	
Ministers	0.43
Lawyers	0.55
Doctors	0.73
Industrial education:	
In agriculture	59.13
In manufacturing and mechanical	14.63
In personal service	13.89
In trade and transportation	9.51
	97.16
100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Redeeming Waste Land.

It is proposed to redeem from sterility the great desert in the western part of Kansas and Nebraska by damming the Arkansas and Platte rivers and turning the waters into the desert, forming a lake, from which water could be drawn for irrigating purposes.—*Exchange.*

The *Champion* believes that nearly all of that region will be redeemed, without irrigating, by the ordinary forces of nature, working in their silent but effective processes. The "Great American Desert" is vanishing. It extended from far beyond the Rocky Mountains to the banks of the Missouri River fifty years ago. When Kansas was organized, its eastern boundary was located along a line from about the center of Washington south through Clay, Davis, Chase and Greenwood counties, to the Indian Territory. All beyond that line was a sandy, arid desert. About the time Kansas was admitted as a State, this line had been extended thirty or forty miles further west. Then the civil war closed, a great immigration flowed into our borders, and it suddenly pushed further west a hundred miles or more. Now thrifty settlements are scattered all through Norton, Graham, Ellis, Rush, Pawnee and Edwards counties, and the "Great American Desert" is still beyond.

Talking with Senator Plumb a short time ago, on this subject, he said that he had visited Prof. Hayden's rooms, in Washington, and found that distinguished gentleman preparing a very elaborate map, showing the humid and arid sections of the Continent. The Professor had a line drawn north and south through the State, about the vicinity of Abilene, and had designated all that region west of this line as arid territory. The Senator said to him, with some emphasis, that there were at least two tiers of counties, west of this line, which were among the richest and most populous in the whole State; in which abundant crops had been produced for several successive seasons; and where the general humidity of the atmosphere and the rain-fall had been abundant for agricultural purposes. The Professor, in reply, asked him to draw a line which in his (the Senator's) judgment would properly divide the arid and humid sections of Kansas. The Senator said he might do this, as applying to the present time. But, said he, "it would not be correct two or three years hence, because that line, controlled by forces of nature which I do not pretend to understand, is steadily moving westward."

Senator Plumb asked us if we remembered how often attempts were made, ten or twelve years ago, to occupy and cultivate some of the now populous and fertile counties of southwestern Kansas, and how disheartening were the failures. He said that Lyon county men had, for several successive years, gone into Butler county, taken up homesteads, and attempted to cultivate them, but were driven away to repeated failures, and returned to Emporia reporting that agriculture could never be made to succeed in that section. Suddenly, one year, everybody was surprised to hear that Butler county had a thrifty population, and that its citizens had met with extraordinary success in agricultural pursuits. Butler county now has a population of over 10,000 and produced, last year, 2,134,062 bushels of corn, 153,000 bushels of wheat, and 354,480 bushels of oats. One of its citizens reports a yield of 63 bushels of wheat to the acre, and another had a yield of 1,100 bushels on twenty acres.

Col. Thos. Murphy, of this city, who was Superintendent of Indian Affairs from 1865 to 1869, told us, some time ago, an interesting personal experience illustrating this subject. He was ordered, in October, 1865, to make a treaty with the Cheyenne Indians. Accompanied with a large train and an escort of troops, he traveled southwest, to Camp Supply, in the Indian Territory, passing directly through Butler, Sedgwick and Sumner counties, and camping, one night, on the present town site of Wichita, where Wm. Griffenstein had a trading post.

A few years later, in Washington, he met a number of the Directors of the Atchison,

Topeka & Santa Fe Railroad Co., who were then engaged in constructing their line southwest from Topeka. Ascertaining that Col. Murphy had traveled over the region through which their line would pass, they asked him about the soil and country, and its adaptability for cultivation and settlement. Col. Murphy says that he endeavored, for some time, to evade an answer. As a citizen of Kansas and of Atchison, he was especially anxious that the railroad should be completed, and was afraid his reply would discourage these gentlemen. But they pressed him for a definite answer, and he finally said that, as they were probably entitled to it, he was compelled to be frank, and to say that he did not believe the country west and southwest of Chase county could ever be made available for agricultural purposes; that he would not give ten cents an acre for it; and that it was, in fact, an arid, sandy desert, upon which nothing but short buffalo grass and cactus grew.

Col. Murphy did not visit this region again for several years, and until after the railroad had been completed to Wichita. He says he was utterly amazed at the changes that had occurred. It did not look like the same country, in any respect, and he could not see a single familiar feature. The buffalo grass and cactus had disappeared, and in their stead tall, rank prairie grass, five to six feet high, was waving in the breeze; the soil, even, seemed to have undergone a transformation, losing its dry, sandy appearance, taking on a darker hue, and filled with moisture; and the richest, most luxuriant fields of grain were scattered thickly over the land. Nothing except the fact that Griffenstein was still there, and had been there all the time would have convinced him that this was the country he had traveled over a few years ago, and this was the spot where he had camped for a night while making the trip.

The same singular transformation has been witnessed or noted by thousands of the people of this State. The advancing waves of settlement roll over a country, and are driven back; there seems to be, for a few years, a line dividing the humid from the arid region, and beyond it no settlement or cultivation is possible. Suddenly it vanishes. No one can tell exactly where; no one knows how; no one can explain why. But it has disappeared, moving westward fifty or a hundred miles, and just as suddenly a large section of country, between which and the cultivated regions of the State it had interposed for years an impalpable but still impassable barrier, is occupied, subdued, and teeming with abundant crops, and all the growth and life of a prosperous civilization.

How far this line can be pushed westward we do not pretend to say. Whether we have yet reached the limits of the arable land on our western frontier, we do not positively know. But we should not be at all surprised if it is discovered, within a few years, that there is no section of Kansas not capable of producing abundant crops.—*Atchison Champion.*

What Becomes of Fines?

The Neodesha Free Press informs us that Zenas Park, Superintendent of Public Instruction for Wilson county, has caused the arrest of an ex-justice of the peace, on a charge of embezzlement, for not turning over to the school fund certain fines collected from whiskey sellers. This brings to mind a point which may make considerable music some day.

What becomes of fines paid to justices of the peace, and clerks of courts, by persons convicted of crime? How many justices of the peace and clerks in Kansas are guilty of embezzlement? It is time somebody looked up the facts in every county.

In the article in the State Constitution on "Education" is the following section:

"SEC. 6. All money which shall be paid by persons as an equivalent for exemption from military duty; the clear proceeds of estrays, ownership of which shall vest in the taker-up; and the proceeds of fines for any breach of the penal laws, shall be exclusively applied in the several counties in

which the money is paid or fines collected, to the support of common schools."—*Gen. Stat., 1868, p. 51.*

Persons are convicted of violating the penal laws every day, and are fined therefore, before justices of the peace and in the district courts. Many of them pay their fines. Persons found guilty of assault, assault and battery, petit larceny, malicious mischief, and a score of the lesser crimes, are usually punished by fine. The county treasurers, in their statements of "moneys received" into the treasury, seldom mention the receipt of fines. What becomes of the fines paid to justices of the peace all over the State? In order that the facts may be inquired into, we call attention to the following sections of the procedure act in criminal cases before justices of the peace:

"SEC. 25. Whenever a conviction shall be had before a justice of the peace under this act, he shall make a certificate of such conviction under his hand, in which it shall be sufficient briefly to state the offense charged and the conviction and judgment thereon, and, if any fine has been collected, the amount and date thereof. Such certificate shall be filed by the magistrate within twenty days after such conviction in the office of the county clerk of the county in which such conviction is had.

"SEC. 26. All fines imposed by any justice of the peace under the provisions of this act, if paid before the defendant is committed, shall be received by such justice; but if paid after the defendant be committed, shall be received by the sheriff; and any justice of the peace or sheriff shall within thirty days after the receipt of any such fine pay the same over to the county treasurer, and take duplicate receipts therefor, one of which he shall file with the county clerk."—*Gen. Stat. 1868 pp. 883, 884.*

Will the county clerks tell us how many "certificates of conviction" are filed in their offices by justices of the peace? Will county superintendents look into the matter? Let them investigate. But perhaps justices of the peace are not afraid of the penalty prescribed for their neglect. Here it is:

"SEC. 28. Any justice of the peace who shall fail to file the certificate required to be filed by the twenty-fifth section of this act, and any justice or sheriff who shall fail to pay over to the county any fines received by them as required by the twenty-sixth section of this act, shall be deemed guilty of misdemeanor, and upon conviction be punished by fine not less than ten nor more than five hundred dollars."—*Gen. Stat., p. 884.*

One other question: We have heard it said that justices of the peace in cities pay the fines imposed by them into the city treasury, where they are appropriated and used for city purposes. Is this true? and if it is, by what authority is it done?—*Educational Calendar.*

Metric Definitions.

The most distinctive feature of the metric or decimal system of weights and measures is its decimal subdivision of units, instead of the binary or halving subdivisions as in use.

The monetary system of the United States is decimal, the unit or dollar being divided and subdivided into tenths, hundredths and thousandths. The metric system is the decimal system applied to units of length, capacity, weight, surface and solidity precisely as it is applied to units of value.

The unit of length is called meter. Its subdivisions are called decimeter, centimeter and millimeter; these prefixes being taken from the Latin language, and signifying respectively tenth, hundredth and thousandth.

The unit of capacity (there is but one) is called liter. The names of the subdivisions have the same prefixes as the meter, and are deciliter, centiliter and milliliter.

The unit of weight is called gram, and its decimal parts are decigram, centigram and milligram.—*Educational Calendar.*

It is the opinion of an intelligent dairyman that there is a difference of two quarts of milk a day between a cow comfortably housed and the same one exposed to the cold for half the day, as we see them.

STANLEY'S African expedition cost \$115,000, and he discovered 15,000,000 uncovered Africans. The Worcester Press says six heathens for five cents is very reasonable.

THE Leavenworth Board of Education has adopted the plan of single daily sessions for a large part of their city schools.—*Lawrence Journal.*

THE INDUSTRIALIST.

SATURDAY, JANUARY 19, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

No man in Kansas has so heavily engaged in wheat growing, and, therefore, had so strong an inducement to find the best methods as the Hon. T. C. Henry. Hence, his practical experience upon this important industry has peculiar value to Kansans, and we gladly devote our space to the excellent paper read night before last at the Farmers' Institute. Mr. Henry has not seen "proof," and the errors and sub-heads can be charged up to us.

Prentis in Europe.

The finest thing of the kind we ever heard was Prentis' recital of his "Impressions of England, Ireland and Scotland." The naturalness and oddity of the first sentences aroused keen curiosity, which soon "rolled" into irresistible laughter; and from that point to the stirring peroration, there wasn't a single dry place large enough for the foot of Noah's dove. The lecture wasn't solid clippings from the guide books; it wasn't a condensed history of the globe, with collateral outlinings of the solar system; it wasn't an attempt to see or describe things as Dr. Dryasdust would have described: it was simply what Prentis saw, put as Prentis would naturally put it.

There are in that lecture magnificent descriptions fairly surging with power, that yet are as truthful as a photograph; and before the hearer has quite gotten clear of the flash of a bit of wit, he finds himself thrilled by a burst of true eloquence. If Oliver Wendell Holmes should deliver it word for word in Boston, it would be pronounced as one of the finest things extant; and we fail to see how the difference in the name of the author at all alters the worth of the production. It is a splendid treat, and makes one eager for more of the same sort.

Kansas Wheat Culture.

[A paper read before the Farmers' Institute, at Manhattan, January 17th, 1878, by Hon. T. C. Henry, of Abilene, Dickinson County.]

In discussing the topic which it is my province on this occasion to consider, I shall endeavor to be plain and brief. Only such matters as are clearly relevant to a practical exposition of the subject in hand, will be considered. Ours is pre-eminently an agricultural State. In proportion as we successfully develop its agricultural interests will be the measure of our social and financial progress. The production of wheat has now become the leading industry in the State. Four years ago its profitable culture was almost universally questioned; today, in proportion to the capital employed, we stand unrivaled in the world. If the present year prove as auspicious as it now promises, our total product will undoubtedly exceed any other State in the Union; and yet, it is obvious that the extent to which its production will eventually and soon be carried, can hardly be conjectured. Considering therefore the vast interests involved, it is important that such experience as we can command shall be secured for immediate service.

KANSAS SOIL.

I am confident that the winter wheat area of Kansas, as already ascertained, has naturally no equal east of the Sierras; and I doubt if anywhere the chemical elements in the soil essential to the continued production of wheat, exist in such favorable proportions as in certain limits within our State. If California, Minnesota, or some foreign parts excel us, the advantage lies in a more favorable climate, or less liability to insect scourges, rather than in the superior adaptability of their soil to the crop itself. Vegetable mold to supply carbonic acid for the young plant, silicates to afford strength to the growing stalk, phosphates and alkalies to perfect the grain, are all deposited

in remarkable uniformity and in surprising profusion in our soil. With natural conditions so favorable, and the experience of other States to guide us, there is no proper or sufficient reason why we may not prolong the growth and culture of that cereal indefinitely. The famous wheat plains of Joppa are as productive to-day, under a crude and primitive system of culture, as they were eighteen centuries ago.

CONDITIONS OF SUCCESS.

If with the natural conditions so favorable, why, may be asked, is it that a correspondingly uniform success has not crowned the efforts of our farmers? To endeavor in some degree at least to answer this question, is the main purpose I have in appearing here at this time. What I shall say will refer to winter wheat exclusively. I am not partial to spring wheat, and very much regret, for reasons I may perhaps give before I close, that a revival of its culture is so probable.

VARIETIES.

I will first treat of the various varieties of wheat. I am confident that we can never succeed worth our while with any of the white varieties. The difficulty is with our climate. The atmosphere is too dry and we have too much heat and sunlight. The delicate white varieties are the product of the humid climate of the north. We must, I think, rely upon such as have a dark colored bran, and which therefore best absorb the rays of light and heat. I have observed that all white varieties rapidly deteriorate in our climate; and I have rejected all further thought of growing them. Those varieties which mature earliest in the season should be selected. I do not care how much a particular sort may promise, if it be late I should oppose its introduction. If a season be cut short by the hot south winds, which always inaugurate a drouth, then the crop is injured; or, if the season is favorable as to moisture, then the rust is likely to attack and ruin it. The Early Red May, sometimes called the Little Red May, has unquestionably proved to be best adapted to our climate among the number which have come into general notice. The berry has a dark bran, is small, and very plump and very hardy. It never gives a big yield but averages well, and always commands a good price relatively. The Orange wheat has done even better than the Red May, but it has not yet been sufficiently tested to justify its supplanting the other. It is an amber wheat, has a larger berry, and is a few days earlier than the May. The Egyptian is well spoken of. The Fultz wheat apparently possesses every requisite, and yields extraordinarily; but it is a little late, and that fact subjecting it to rust made my loss much greater the past year than if I had sown Red May instead. I conclude, therefore, that as a given variety approximates the characteristics of the early Red May, to that degree and extent will it prove adapted to our State. If white wheat succeeds, it will be upon the wheat soils in the eastern or south-eastern portions of our State. I do not advise much further experimentation in new varieties. We have a sufficient number already introduced that are adapted to our soil and climate. It is, however, very important that we change seed. I know beneficial results follow that practice. Seed grown upon upland does best upon bottom land, and vice versa. So changes from clayey to sandy soils, or calcareous to silicious, &c., &c., should be made.

EFFECT OF CLIMATE.

I am convinced that the climate has far more to do with the success or failure of wheat culture in the United States than the supposed absence or presence of the constituent elements in the soil. Give me an equitable and uniform rain-fall, and I will remove fifty per cent of the probabilities of failure; add to the rain-fall a favorable March, and twenty per cent more of the danger is lessened; and supplement both with a dry and cool June, and the element of failure is almost entirely eliminated—always excepting locusts, chinch-bugs, and pests of that class.

EXHAUSTED (?) SOILS.

Much is said concerning the gradual exhaustion of the soil in sections famous in years past for the production of wheat. Virginia, New York, Ohio, and other States are instanced as conclusive evidence. I do not question that there are many scopes of territory whose soil affords such a scanty supply of the phosphates or silicates perhaps, that a few continuous crops exhaust these elements. But in general the failure may be ascribed to a change of climate or the

appearance of some insect scourge. The Genesee Valley of New York was once world-famed for its wheat, and now it is generally supposed to refuse to produce except in limited returns. The true facts, I apprehend, are not popularly known. The product of that section did not perceptibly decline until the ravages of the weevil appeared twenty-five or thirty years ago. Farmers were then compelled to give more attention to the culture of other crops. The largely increased population of the cities and villages—taxing the efforts of the surrounding country to supply them, the divided farms, the greatly increased acreage devoted to fruit and vegetables, the bulky crops—particularly hay, have all combined to lessen attention there to wheat: and the cheap grain from the West has produced some effect. But I am confident that the condition of the soil in the Genesee country is as favorable to the growth of wheat as it was twenty-five years ago. Last year was a propitious one, and the yield has not been equalled in twenty years. If the lessened product is to be ascribed to the exhaustion of the soil, how shall we account for the fact that their new lands are no more reliable or certain than the old fields? and yet it is true that the crop is more uncertain than it was formerly. The explanation may be found, I think, in the changed climate, owing to the destruction of forests, thereby exposing the fields to the cold blasts of winter and interrupting the regularity of the seasons. And I presume the same is true of Ohio, in some measure, as well as of other sections.

IRRIGATION.

Given a soil moderately well supplied with the proper constituent elements, and so long as irrigation can be applied so long wheat may be grown. The valley of the Nile has produced successive crops of wheat for unnumbered ages, and no fertilizing elements have ever been added other than such as may have been deposited by the overflow of the Nile, and which Dr. Liebig asserts must of necessity be very inconsiderable. But let us come nearer home. To a person accustomed to the appearance of the wheat soils of central Kansas, the first impression of Colorado as a wheat section is disheartening indeed. A light colored, thin and sandy soil—worthless; but give it a full supply of water and those unpromising uplands, such as surround Denver for instance, present a return that really surprises and undoes a patriotic Kansan. What is the explanation? The mountain snows which supply the irrigating canals are as pure almost as the air there itself. Nor can it be said that much if any organic matter can be gathered in their way along the granite beds down the mountain sides. Nevertheless the water, even when first applied at the base of the foot-hills, works as marvelous a change upon vegetation as it does carried twenty miles farther out. No, the constituent elements already exist in the soil, and the water performs the work of disintegration, thus preparing them for plant food.

HURRAH FOR THE PLAINS!

And here I may say I am confident that the plains are naturally the best wheat lands in America, if water in some shape can be given them. Do I think it ever will be? Yes. How and when, I can't tell. Is it not a curious fact that all the famous grain districts of history are either located in the midst of, or very close by, rainless sections of the earth?—Asia Minor, Southern Russia, Egypt and the Barbary States. And what is the protracted rain period of California but a sort of irrigation? If we can discover some prominent and distinguishing characteristic that is common to all these districts, we may be able to deduce conclusions that will go far towards aiding us in determining which are our best wheat lands, and the reasons why.

POROUS AND AIR-TIGHT SOILS.

In all famous wheat soils, there is a very considerable proportion of sand. Now, I do not apprehend that the abundance of silica makes a wheat soil *per se*. The fact is, no element of the wheat plant is less likely to be exhausted, for the reason that the main portion is always returned to the soil in the straw. But a sandy soil means a porous soil, and the influence of the air is more readily and directly exerted upon the elements in the soil which are in contact with the rootlets of the plants, as well as the plant itself. If a plant were placed in an air-tight vessel, though the body

and leaves were freely exposed to the air, and though the vessel were filled with the most fertile and favorable soil, the plant would wither and die. This fact explains the necessity of securing a loose and lively soil for the plant. Close and compact clay soils fail naturally as a rule to produce good wheat. They are too nearly air tight, and especially in a wet time the retention of water upon the surface and above the roots actually smothers the plant. If you can loosen these tenacious soils so as to give the air an influence, you have as a consequence the very best wheat lands. I have observed that the best grain fields in New York to-day are those which thirty years ago were generally rejected because possessing such stiff and unmanageable clay. Drainage, and deep and thorough culture, have given the atmosphere an opportunity to do its work, thus enabling the plant to appropriate the abundant alkaline salts naturally present in the soil. I conclude, therefore, that generally those lands which have a hard-pan close to the surface—gumbo and that sort; such lands as do not permit the rains to percolate to the subsoil and below to the roots; such lands as continue damp for an undue time after a rain-fall; lands which are wet and sticky and glossy with moisture on the surface, in the spring while the frost is coming out of the ground; are all unsuited to wheat growth. Thorough and proper culture will of course modify them somewhat. Another class of lands which are objectionable, are the low, rich, alluvial bottoms. The extensive deposit of humus or vegetable mold makes an excessive growth of the plant, and the result is an herb and no fruit. As a rule, those soils which produce the shortest growth of stalk, grow the finest berry and are the most reliable wheat lands. The famous wheat districts I have mentioned grow a small plant, and I always aim to avoid a large and lengthy stalk. On the deep, alluvial soils, this can only be done by thick seeding. In that way the plants are crowded, hence stunted, and mature much earlier than they otherwise would.

QUANTITY OF SEED.

In regard to the quantity of seed required, I have nothing unusual to advance. I have often wondered, let me say, what becomes of all the grains which are usually sown. Certainly not one-half of them, if they all germinated, would be required. If two berries in a place were planted in spaces four inches apart each way over an acre field, less than a third of a bushel would be consumed. But in practice I have found that it is not best to do with much less than a bushel or a bushel and one-fourth of clean, good seed to the acre. I am aware that many instances can be shown where, by some accident, such as when by a partial winter-killing the stand had become reduced, and the crop under the influence of a favorable season stooled out surprisingly, an unusual yield was the result, greater, possibly, than in a field with no mishap to the stand. But to rely upon such a thin seeding would be, I am sure, precarious. Stooling always retards a plant—causes too great a vegetative growth; and if the rust does not overtake and ruin it utterly, an inferior grain is almost the certain result.

HOW TO DO IT.

The methods of culture in Kansas are as yet nearly as various as the nativities of the farmers who have introduced them. I cannot say that I think the best system, the system that will prevail in the future, has been evolved from our experience so far in wheat culture. Beginning with the prairie, I find scarcely any diversity of opinion as to the manner of operations the first year. Breaking should not begin earlier than the middle of May, and should be ended by June 25th. It is unnecessary to re-plow or stir the sod. A couple of thorough harrowings, completed by September, and then the drill followed by a third harrowing, is generally the best method of seeding. I mention the drill not that it will cause a better crop on sod, but simply that the seed is more likely to be sown uniformly than by broadcasting. If I had no drill and could sow by hand reasonably well, I should lose no time nor go in debt to buy or borrow one. Here permit me to say that I deprecate most strongly the practice of getting in debt for agricultural implements and machinery,—a practice too common among the farmers of this State.

DON'T DO IT!!

Talk about bonds, land payments, the cur-

rency, low prices, or grasshoppers,—none of them, nor all of them, have dragged our people so deeply into debt as "improved" farm machinery sold on time. Why, I remember when a mere boy how many times my father, though owning a good farm in western New York and in comfortable circumstances, went to the shire-town of the county to examine a certain pattern of wheel cultivator; how long he hesitated, how carefully he made his estimates of its value to him, the family councils on the subject before he finally ventured to make the purchase. And what do you imagine was the expense of that wonderful implement?—twenty-six dollars. Again, some years later, with a much larger farm and ampler resources, the question of purchasing a reaper was considered. The advantages were clearly seen, the necessity was apparent, but two hundred dollars was a sum too important to be hastily disbursed or promised. I was enthusiastic and wanted the machine; but two hundred dollars, I was assured, were not made every day, and so my judgment was overruled. The immediate consequence was that in the summer of 1858 my father, unaided, cradled twenty-four acres of wheat, and I, a stripling of sixteen, raked and bound every bundle of it. Within three years, I have known of a farmer in Kansas, twenty miles from a railroad, upon an eighty-acre homestead, living in a "dug-out" with a family of six children, mortgage his only team to make a "down" payment on a Kirby combined machine with all the latest appliances, to harvest a ten-acre wheat field and four acres of oats. The horses were saved, but the machine was sold under chattel mortgage the next year.

HOW TO KEEP ON DOING IT.

To resume, the second year I favor stirring the ground, but not more than a couple of inches deeper than the first depth of the breaking. If much deeper, there is brought to the surface soil which is wild and unsubdued, and which is filled with woody fiber not yet fully decomposed. The stirring should be done as early after harvest as possible. And if weeds are likely to grow, so as to embarrass seeding, harrow the ground as often as necessary to subdue them. I prefer the drill with which to seed. First, because the seed is more uniformly distributed; second, and mainly, because if the fall is dry and a resulting small plant, the drill-marks afford protection from the severity of the winter winds. If I could secure careful broadcast sowing, and was insured a vigorous growth by winter, I should prefer it. It is a mistaken idea that deep seeding insures a firmer hold for the plant. If wheat is plowed in, a very considerable percentage of the vital force of the plant is expended in the effort to reach light and air, and a puny plant is the result at the very outset. The roots which support the permanent growth are put forth just underneath and very near to the surface of the ground. In a short time, all the growth below decays and is abandoned. In other words, it matters not how deep the seed may have been deposited, the main supporting roots are always put forth within an inch of the surface. That plant is always most vigorous which sprouts from the seed at the very surface of the ground—if it but get a start sufficient to maintain itself. Gather about the plant a couple of inches of dirt, and notice how quickly you check its growth. Potatoes are planted deep in the ground—that is, when you find the harvest. Nature's broadcaster is the wind.

OLD GROUND.

On old ground, I think deep plowing should be practiced. But the work should be done some weeks prior to seed-time, so that the ground may become settled and compact as possible. Our fields, especially if followed by a dry autumn, are apt to be too loose, and the dry atmosphere, penetrating the soil freely, robs the young plant of its requisite moisture. I do not believe that deep plowing need be practiced for every crop. Every second or third crop is sufficient. Upon a barley field, for instance, which was prepared by deep plowing in the spring previous, if free from weeds and litter, I should not hesitate to drill in wheat without plowing. Nor should I hesitate to seed after corn in the fall, among the standing stalks. Of course I have reference to natural wheat soils, such as I have described before.

I shall not undertake to consider the matter of fertilization. A proper consideration

of that subject would form material for a complete essay in itself. Nor shall I consider the subject of rotation of crops, for the same reason. I will, however, take occasion to say that I have been unable as yet to find a worn out, exhausted wheat field in Kansas that refused to produce well when a deep plowing of eight or ten inches, followed by a corn crop, had preceded it. I am confident that a genuine, thorough, Yankee summer-fallow would gratify and astonish its owner by the return it would give him.

HARVESTING.

I have no ideas concerning the harvesting of wheat worth your consideration, or beyond what is ordinarily known. I believe that the header will be used for a long time to harvest the larger wheat fields of western Kansas. Much grain is lost, however, in stacking, though not necessarily if care be used. But for all purposes, and everything considered, the self-binder, I believe, is the implement that will finally prove best adapted to the wants of the average Kansas farmer.

I have observed that the practice which prevails in the Eastern States, viz., of cutting the grain several days before it is really ripe, does not answer as well here. The grain must be fully matured, otherwise the hot sun dries the stalk at once and a light shrunken berry is the result—just as if you were to shell out the grain and expose it to the sun before it was sound and hard. The character of the season with reference to moisture will modify somewhat the above conclusion.

CAUSES OF FAILURE.

The dangers which threaten Kansas wheat are to be considered. Many of them well known to you need not be considered. I shall not attempt even to enumerate them. Some are providential and thus clearly beyond our ability to ward off. But more crops of wheat are lost by a careless culture than grasshoppers ever have or ever will destroy. The chief point is in securing a stand of vigorous plants—to get safely through until spring.

If a strong growth is not secured by cold weather, the chances of a failure are greatly increased. If we could always rely upon such a favorable rain-fall as has occurred the past season, there would be no trouble on this score. But we cannot. Our reliance must be upon a thorough preparation of the soil by early plowing, pulverization of the surface, a compact body underneath, early seeding, and the use of the drill. March is the trying month, especially to the late-sown fields. The surface is checked and furrowed by little crevices, created by the action of the frost first and the evaporation of the moisture of the surface afterwards, thus permitting the air to absorb the moisture from the weak plant on every side. Harrowing and rolling have been suggested as a remedy at that time. But I do not favor it. First, because, unless the ground is very smooth, the roller especially has no effect, except upon a portion of the surface; and, again, a field left in that condition, exposed to a strong wind of two or three days' duration, would blow soil, wheat, roots and all to ruin. It is best, as a rule, to let the field take its chances, and next time seed in season. The danger from wind is, let me say, greatly lessened by drilling east and west.

SPRING WHEAT.

I have stated that I am not partial to spring wheat, and will give my reasons in brief: It matures late, and hence is liable to be affected by drouth. It is an inferior wheat, and hence commands a less price than winter wheat. It yields less, and hence is not so profitable. And, worse than all, it undoubtedly propagates chinch-bugs—the worst enemy, by far, which the Kansas farmer will be called upon to contend with. I am aware that the Odessa, for instance, has proved successful the past year or two since its introduction, but the seasons have been favorable for it. It is later than any other spring wheat variety I am acquainted with, and necessarily more exposed to the disasters of drouth and chinch-bugs.

WORTH OF A PRACTICAL EDUCATION.

I do not wish to protract this essay, already, I know, too long; but I cannot conclude without expressing a few thoughts concerning the importance of a knowledge of the principles of agricultural chemistry. Within a few years, and since my personal interests have induced a more careful observation of the nature and growth of the wheat plant, I have been astonished to find

how closely my conclusions have accorded with the researches of science; and I have thought if an iota of the time I have spent in groping my way along had been given in youth to an acquaintance with the fundamental principles of organic and agricultural chemistry, how much more certain and direct would have been my pathway to the results I wished to obtain. I have long since found that the most economical experience is that which may be gathered from an observation of others' successes or failures; and as I have pursued my way in traveling about the country, how often I have overtaken great failures entirely owing to an ignorance or a disregard of some law plainly discernible to the student of nature; failures that might easily have been successes, and thereby afforded ample means to secure for the youth of an entire household, perhaps, that sort of a practical education precisely necessary before the end of such agricultural follies is reached.

THE INDUSTRIALIST.

SATURDAY, JANUARY 19, 1878.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending January 17th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.	Inches of Rainfall.
	Max.	Min.	Mean.		
Friday.....	11 54°	34°	46°	50	28.42
Saturday.....	12 42	25	37	.25	28.57
Sunday.....	13 33	11	31	.25	28.76
Monday.....	14 33	11	22	.75	28.89
Tuesday.....	15 38	12	27	.75	28.84
Wednesday.....	16 50	20	35	.75	28.80
Thursday.....	17 53	28	42	.50	28.65

Average temperature for the week, 34°.82.

Range of temperature for the week, 43°.

Rainfall for the week, .49 of an inch.

Snowfall for the week, 3 inches.

A whole page of editorials and locals crowded over.

We will send four numbers of the INDUSTRIALIST without charge to any person desiring it.

After you have read this paper, hand it to the next most sensible person of your acquaintance.

New students desiring information respecting boarding, or rooms for "baching," will please address A. A. Stewart.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

G. C. Brackett, Secretary of the State Horticultural Society, has been in attendance upon the Farmers' Institute, held in Manhattan on Wednesday and Thursday of this week.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

String telephones have been erected during the week by various students. This telephone makes a very cheap, convenient and labor-saving means of communication from room to room or house to house.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Having secured Mr. Henry's article after the "outside" was printed, we are reduced to the expedient of issuing "half sheets" as an extra edition with which to meet the inevitable demand for this document.

The calendar of the Agricultural College for 1878 will be as follows: The Spring Term opened on Thursday, January 3d, and closes Wednesday, May 22d. The Fall Term will begin Wednesday, September 4th, and close Wednesday, December 20th.

We hasten to chronicle the arrival of another Shorthorn, this time per that grand cow, Grace Young 4th. This cow was purchased by the College in 1873 for \$800. Since that time she has dropped four heifer calves and one bull calf, for nearly all of which round prices have been refused. But this is not all. Two of these heifers have themselves produced calves—a heifer and a bull, so that the College now owns seven valuable Shorthorns—two bulls and five heifers—the increase of this one cow purchased in 1873.

The pleasure and profit derivable from the use of the magnetic telephones will be tested by a half

dozen gentlemen who have ordered the instruments. They will be connected with the College telegraph line, and can be used when that line is not occupied by class practice or in the transaction of regular business. Of course the telephone will be secondary, and when necessary will stand aside for the primary purposes of the line; but we anticipate considerable pleasure from evening parties, where you don't have to dress up.

Friday, January 11th, Alpha Beta Society called to order by the President. Five persons were initiated. The name of Miss Finney was proposed for membership. The debate upon the question, "Resolved, That the Indian has received more injury at the hands of the whites than has the negro," was discussed, the decision being given in favor of the negro. A declamation of extraordinary merit was delivered by Miss Emma Parish. Prof. J. D. Walters interested the Society with a few well-chosen remarks upon the subject of industrial education.

Debate next week, "Resolved, That punishment does not produce any real repentance." Affirmative, Estella Bouton and A. E. Wilson; negative, Hattie Allen and W. H. Sikes. The Gleaner is to be presented by C. J. Reed and Emma Glossop. Music is furnished the Society by standing committees. We would be pleased to have all persons honor us with a visit.

C.

The first regular meeting of the Webster Society was held in Telegraph Hall, January 5th, 1878, at 7 o'clock P. M. After the opening exercises, the question, "Resolved, That the statesman is of more benefit to his country than the Warrior," was discussed, being decided in favor of the statesman.

The Society then passed to the election of officers, with the following result: For President, B. Anderson; Vice-President, L. A. Salter; Secretary, C. E. Wood; Treasurer, A. N. Godfrey; Corresponding Secretary, Irving Todd; Critic, A. N. Godfrey; Librarian, L. A. Salter; Marshal, J. A. Bell; Directors, to fill vacancies, A. N. Godfrey and A. F. Dixon; Reporter, Irving Todd. The names of Messrs. Call, Reeve and Jewell were proposed.

Saturday evening, January 12th, 1878, Society met as usual. After the opening exercises, the officers that were elected at the last meeting were installed. Messrs. Call, Reeve and Jewell were elected members of the Society and initiated. The question, "Resolved, That capital punishment is justifiable," was decided in favor of the negative, after a spirited debate. Extemporaneous speaking ensued with much interest. Mr. Bell declaimed, Mr. A. F. Dickson presented an essay, and Mr. J. B. Dickson read a selection. The names of Messrs. Mason, O. M. Wylie and J. M. Wylie were proposed. Question for next meeting: "Resolved, That U. S. Grant did more for the good of his country than did Abraham Lincoln." REPORTER.

ENTERPRISE ITEMS.

The soldiers at Fort Riley were paid off last Wednesday.

Judge Clarady is going to send his boys to Manhattan to attend school at the Agricultural College.

Frank Smeltz was kicked in the face by a mule at Abilene the other day. Frank must have Smeltz something.

Three hogs were weighed at the pens near the depot yesterday that aggregated 1,980 pounds. The heaviest weighed 700, and was fed by Mr. Weaver, of Mill Creek.

The Ponca Indians have received their ulster overcoats. They put them on immediately. They stuck their legs through the sleeves all right, but what in the name of goodness to do with the rest of the coat they didn't know, and they never will find out.

TO BUILDERS.

Sealed proposals for the erection of a building for the Kansas State Agricultural College (estimated cost about \$12,000) will be received by the undersigned until seven o'clock P. M., on Tuesday, February 12th, 1878. Plans and specifications can be seen after February 1st at my office in Manhattan, and at the office of E. T. Carr, architect, Leavenworth, Kansas. Bids will not be considered unless guaranteed by parties of known responsibility. The right is reserved to reject any or all bids.

N. A. ADAMS, Secretary.

School District, Township and County Bonds.—District Boards, Township Officers, and County Commissioners are invited to correspond with us before negotiating elsewhere, as we always pay the highest market price. Address, E. Gale, Loan Commissioner, Manhattan, Kansas.

Manhattan Bank.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange is used on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

THE INDUSTRIALIST.

SATURDAY, JANUARY 19, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Junction City News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Nedesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could do no better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

THE ATCHISON CHAMPION.

DAILY AND WEEKLY.

JNO. A. MARTIN, *Editor and Proprietor*.
JAMES A. LOPER, *Business Manager*.

The weekly *Champion* will early in February, 1878, complete its twenty-third year, and enter the twenty-first year of its publication under the management of its present proprietor. For nearly a quarter of a century it has been one of the most widely-known journals in Kansas. For three years, when called the *Squatter Sovereign*, it was the most influential and earnest pro-slavery paper in the Territory. For over twenty years it has been just as radical and as earnest an advocate of Freedom, the Union, and principles and policy of the Republican party.

Through all that stormy and eventful period preceding and following the admission of Kansas into the Union, the *Champion* was recognized as one of the most potent agencies in moulding the sentiment and controlling the destinies of this young commonwealth. And during its whole career it has been conspicuously zealous, faithful and efficient in presenting to the public the resources and advantages of Kansas, and detailing the growth and development of the State. It has been and is pre-eminently a

KANSAS NEWSPAPER.

It has for many years given more attention to, and published more information concerning, Kansas institutions, Kansas agriculture, Kansas industries, Kansas people and Kansas interests, than any other journal in the State. Kansas and Kansas news is its specialty.

It has grown with the growth of Kansas. It is the largest journal in the State, and its circulation far exceeds that of any other Kansas newspaper. There is hardly a hamlet from the Missouri to the western boundary of the State where the weekly *Champion* is not received and eagerly read.

The publisher has, in view of the rapidly increasing demand for the weekly *Champion*, determined to reduce its subscription rates, while still maintaining its size and the large amount of reading matter it contains. From and after January, 1878, the following will be the terms of the weekly *Champion*:

Single subscribers, by mail, per annum, in advance..... \$1 50

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THE DAILY CHAMPION

Will soon enter upon its fourteenth year. It is one of the largest daily journals in the State. It publishes, each morning, full telegraphic dispatches from all parts of the world, and complete details of local, State and political intelligence. Full and accurate market reports from all the great commercial centres of the Continent are given in each morning's issue. The subscription price of the daily *Champion* has recently been reduced to the following low rates:

Per annum, by mail, in advance..... \$8 00

Six months, by mail, in advance..... 4 00

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By carrier, per week..... 25

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The Farm Department offers for sale YOUNG SHORT-HORN BULLS of the highest breeding, together with JERSEYS and GALLOWAYS. Also, a very fine lot of BERMISHIRE PIGS, eligible to record and the get of the celebrated boars Lord Liverpool and British Sovereign II. We have also for sale a few choice ESSEX PIGS, straight Jos. Harris stock, of both sexes. Our prices place this stock within reach of the general farmer. Address EDWARD M. SHELTON, *Sup't Farm*, Manhattan, Kansas. (11-tf)

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact.

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas. 8-tf

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The Educational Weekly.—The union of the School Bulletin and N. W. Journal of Education, Wisconsin; the Michigan Teacher, Michigan; the Illinois Schoolmaster, Illinois; the Nebraska Teacher, Nebraska; The School, Michigan; Home and School, Kentucky; the School Reporter, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States.

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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor THE PRACTICAL TEACHER. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorialy it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, THE PRACTICAL TEACHER, 170 Madison St., Chicago.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, JANUARY 26, 1878.

No. 41.

THE INDUSTRIALIST.

Published every Saturday by the
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KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Ten cents per month, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13—1.13
Professional education:	
Teachers.....	0.43
Ministers.....	0.55
Lawyers.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect.

Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Industrial Education.

The fact that very few of our boys and girls study professions and pursue a professional life, while the great majority of them are compelled to work for a living, is at last beginning to have an important influence in changing the manner of their early education. The number of persons who study Latin, Greek, modern languages, and the higher mathematics, is constantly increasing in this country and in all civilized countries. But free schools are supported for the people generally, and not for the exceptional class whose tastes lead to scholarship or whose wealth permits them to spend their youth and early manhood in obtaining what used to be called a liberal education. That was an education, as Webster says, "befitting a freeman or gentleman, as liberal arts or studies; such an education as is extended beyond the practical necessities of life." That is the precise definition of the phrase, but the "practical necessities of life" are what ninety-nine children out of a hundred are called upon to face when they go out into the world. Our free schools would be doing their public duty in a more acceptable manner if they taught blacksmithing to boys and cooking to girls, than they are when giving instruction in Greek and music.

To go to school is to prepare for active life. All must learn the common branches and learn them thoroughly; after that there is more wisdom in teaching a boy to become a farmer or a mechanic than there is in giving him a course in the classics. The former is useful, the latter ornamental and, as a rule, useless. Books are the tools, instruments and helps of a scholar, as the saw and plane are of the carpenter; but scholars do not number one in ten thousand, while artisans form no small proportion of the population of any town or city. Why forget and ignore the large number and shape our system of education for the educational fraction? The answer is familiar to all. We are governed by tradition and precedent, and not by common sense. Five hundred years ago, to be educated meant to know how to read and write Latin and Greek. This system was then carried so far that the scholar did not study his native language at all, be it English, German or Italian. If he wrote a book, he wrote it in Latin; even his name was changed, begged or borrowed from Latin or Greek. A son of Gerard Praet assumed the Latin synonym of Gerard, Desiderius, the Greek translation of which, Erasmus, furnished his surname. This is our famous Erasmus, as he is known to us and to literature. There are many similar cases of ignoring the vulgar tongue. Bacon wrote his essays in Latin; Milton wrote much in Latin; Petrarch wrote his great poem in Latin. Dante had the courage and genius to be "guilty of a violent literary innovation," and to do his great poem in the vulgar tongue of Italy.

The same superstition, pride, precedent and tradition that weighed down these men is a heavy burden upon us now. The father who knows that his boy will not use Latin in his trade or shop, or on his farm, commands the boy to study it because the study is supposed to be fashionable. The boy does not learn the language; he gets a smattering of it and learns to hate it all his life, while the father only proves that he is a snob.

We are, however, gradually becoming emancipated from the slavery of the middle ages. New occasions teach us new duties. We have a new civilization and a new life, and our children must be fitted for that, not for college. Let all go to college who can, but the people generally do not go, and the public school is for the public generally.

The Governors of States are now discussing this question, and the following is copied from the last message of Governor Hartranft, of Pennsylvania:

"Pennsylvania has unrivaled resources, but unless she prepare for the competition, she must content herself with the production of the raw materials, and her people become the hewers of wood and drawers of water for more highly-cultivated communities. The means must be the diflu-

sion of technical knowledge among the laboring classes; securing the co-operation of the workingmen; creating new industries and diversified interests, and throwing the ways to honorable and lucrative employment open to all. The work of the school-master must undo the work of the demagogue, and the State supplant the bigoted organizations of labor with industrial schools and workshops. If the workingmen will spend the money now used in keeping up such organizations and lost in strikes, in keeping their children at such institutions and co-operating with the State, the dignity and value of labor will be rapidly raised.

Heretofore public education has been too much in the interest of a class. The influence of the old scholasticism has been powerful enough to overbear the force of modern industrial and scientific demands. The resultant has learned too much in one direction, and undue prominence has been given to professional and classical education over industrial and scientific training. A thorough system of industrial training must embrace the children, the workingmen and the people. The children of skillful and prosperous mechanics might find in the primary schools instruction in mechanical and free-hand drawing, and to those who are circumscribed by harder conditions, free night schools could furnish the opportunities of a slower advancement. Reform industrial schools, under a wise system of compulsory laws, could gather the children of utterly destitute or vicious parents and educate them for a useful calling, without contact, on the one hand, with acknowledged paupers or criminals, or lowering the public schools on the other hand, with offensive poverty or low associations. In addition to the theory, it may be necessary for the State to afford practical training in the mechanical arts. It is not probable that the old system of apprenticeship, which has gradually fallen into disuse, can ever be generally restored. Two causes alone would seem to be sufficient to prevent it. In the extensive modern workshop, the proprietor, or master mechanic, or foreman, can never find time to devote to the instruction of apprentices, who are constantly left to pick up, in a desultory manner, what little they learn, and in many industries the necessity of producing articles at the least labor and expense, to compete with others in the market, requires the highest skilled laborers, for which they must depend upon the overstocked labor markets of the old countries, as they cannot afford to educate new hands.

Believing that, under these circumstances, no remedy can be found except through the agency of the State, I renew my recommendation contained in the message of 1875, for the establishment of workshops in connection with industrial schools, and beg leave to refer you to the current report of the Superintendent of Public Instruction for the proofs he has collected of the feasibility and advantages of the plan. It will, perhaps, be a slow and difficult task to secure the co-operation of the present generation of workingmen. But, in all the large cities and towns where that class is principally congregated, lecture and draughting-rooms could be added to the night schools, and such instruction given as would arrest and benefit adults.

Everything that will tend to recognize the importance and dignity of labor; that will excite the pride and emulation of the artisan in his work; convince him of the interest of the State in his welfare and the welfare of his children; and secure the fruits of his industry and thrift, should be done; and I am convinced that nothing will contribute so much to these results as the establishment of industrial and scientific schools and workshops by the side of our present high schools and academies."—*St. Joseph Daily Herald*.

The Outlook of the Times.

Writing under this head, two years ago to-day, we said: "Producing largely in excess of the wants of our own population, we look for a market abroad for our surplus. And, on the average, this market seems destined to increase in quite as rapid pace as our means of supplying it." The period that has since elapsed, has verified the remark even beyond our anticipations. During these two years, a new product—animals alive or slaughtered—has been added to our list of exports, and has grown into a regular trade of no little importance, and undoubtedly capable of enormous future development. And as regards both grain and dairy products, and in salted meats, there has been an open market for increased products of the United States, so that, notwithstanding a decline of over nineteen millions of dollars in cotton during the fiscal year ending June 30, 1877, as compared with that ending June 30, 1875, the net increase in our agricultural exports for two years was over \$30,000,000—from \$437,901,942 to \$468,854,746—and the absolute increase, throwing out cotton, for the two years, was—

	1875.	1877.
In Grain, Flour and Meal, \$111,458,265	\$117,806,476	
Provisions, including dairy products.....	81,343,401	114,991,749
Other Agricultural products, includ'g tobacco,.....	54,461,651	64,888,013
Totals,.....	\$247,263,317	\$297,686,238
Deduct 1875.....		247,263,317
Aggregate greater for 1877.....		\$50,422,921

The farmers of the United States cannot go on earning \$300,000,000, or, if we add cotton, we may say nearly five hundred millions of dollars annually, for this country from foreign countries, without diminishing our heavy debt abroad, and, in the end, not only annihilating it, but adding greatly to the wealth and prosperity of all classes and pursuits at home.—*Country Gentleman*.

The Metric System.

At the meeting of the Board of Education, held last Monday evening, the following resolution was adopted: "That the metrical system of weights and measures be taught in such grades as the Superintendent of Instruction may think proper, the instruction to commence with the next term, thus placing it into the hands of about eight hundred pupils. He also thinks the system may be made a part of the instruction in a lower grade, and that children may be taught the metric scale as soon as they have learned to point off dollars and cents. J. Pickering Putnam in a work published by him says: "Few realize the extent to which the metric system has already been adopted in the United States. Already made legal by Congress in 1866, its use among scientific men and in scientific works is very general. It is used extensively by the United States Coast Survey. It is used altogether by our analytic chemists and largely by physicians, and all those who have dealings with foreign countries; and, further than this, it is the ardent desire of every man who fully understands it to see its use among us universal. The decimal subdivision of the foot is used by engineers. The system is composed of twelve words, while the present system is made up of about fifty words. The words of the metric system, as is well known, are derived from the Greek and Latin languages, which insures them against change."—*Cleveland Leader*.

A Generally "Handy Thing."

A woman is a mighty handy thing to have about the house. She doesn't cost any more to keep than you'll give her, and she'll take a great interest in you. If you go out at night, she'll be awake when you get home, and then she'll tell you all about yourself, and more too. Of course she will know where you've been and what kept you out so late and will tell you; right after she gets through telling you that, she will ask you where you have been and what kept you out so late. And after you tell her, and she won't believe you, you mustn't mind that, and if, after going to bed, she says she hasn't closed her eyes the whole night, and then keeps up the matinee two hours longer and won't go to sleep when she has a chance, you mustn't mind that either; its her nature. —*Newspot Local*.

A MATERIAL called "indestructible glass" has been patented in France, and the patentee uses it for making printing types that have been introduced into practical use among his countrymen, in Germany and elsewhere. They are said to be preferable to metal types in many respects, and in no respect inferior to them. They are cast in the same moulds and make an equally clear and definite impression. They suffer less from wear, cost less, and are healthier for the compositor to handle.—*Exchange*.

A BALL of waste cotton, saturated with coal oil, rolled in sulphur, and fired under a tree, did not burn rapidly, but sent up a dense smoke which killed all the bark lice with which the tree was infested. So says a Pennsylvania fruit grower.

"OH, would we were young again, that we might avail ourselves of the advantages offered to obtain an education at the Kansas Agricultural College, at Manhattan," is the mournful wail of a south Missouri editor.—*Leavenworth Appeal*.

THE English feed for fattening sheep consists of cotton seed and turnips. They claim that it will put on the most fat, is the safest feed, makes the best mutton at a less cost, and produces the best and strongest manure.

THE INDUSTRIALIST.

SATURDAY, JANUARY 26, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

WE are much obliged for the kind notices of the press in regard to the opening of the present term, and also respecting our offer to send the *INDUSTRIALIST* to any teacher in Kansas free gratis. The notices have been of great service to us, and are heartily appreciated accordingly.

THERE is a desire in all parts of State to hear Noble Lecturer Prentis. Kansas appreciates good things. We see that he is announced for January 30th at Emporia, February 6th at Wichita, and February 8th at Hutchinson. Keep the young man on the trot. Address him at Topeka, Kansas.

WE have been so busy of late that it has been impossible to keep track of all the press changes. Three new papers have appeared, each of which is well gotten up:

Ford County: *The Ford County Globe*, Dodge City. D. M. Frost and W. N. Murphy, editors and proprietors.

Jackson County: *The Holton Signal*, Holton. Fairchild & Sargent.

Pottawatomie County: *The Chief*, St. Mary's. Evans & Linn.

Shawnee County: *The Churchman*, Rev. H. H. Loring, editor, has suspended.

Board of Agriculture.

We have been glancing over the monthly reports of the State Board of Agriculture for November and December. To publish the facts which we would like to extract would amount to republishing the document, and fill several numbers of the *INDUSTRIALIST*. No State in the Union can furnish another Alfred Gray; and Kansas is far more largely influenced by the data constantly coming from his pen than it at all imagines. These facts are taken up by the press, thrown into a hundred different forms, and scattered broadcast over the continent. As a result a huge army of thrifty immigrants pours into the State, and soon shows itself in the increased number of cultivated acres and on the tax rolls.

The tabular exhibits of the products of 1877 are as interesting as they are complete; and many of the comparisons suggested by the manner in which Mr. Gray has grouped them are exceedingly valuable. As a single illustration of what we mean, the percentage of acres "cultivated" to acres "taxable," or for that matter to the whole number of acres in each county, might throw light upon the herd law question. It would be quite in unison with the probabilities in the case, if these percentages, when considered together with the date of settlement, should show a very decided advantage upon the part of the fenceless counties. Unproductive land and productive land are just as different as is money paid out from money received. And, as a rule, when land is once broken it will be cultivated year after year, thus adding largely to the permanent productions and wealth of the country.

Answers to Correspondents.

Will the *INDUSTRIALIST* give a remedy for removing lice from sheep? and oblige

R. M. Ross.

Sedan, Kas., Jan. 15th, 1878.

We hardly know what our correspondent refers to by the lice mentioned in his letter. If he refers to the ticks so common on sheep, and especially lambs, we should advise dipping them in a strong decoction of tobacco, similar to that generally used in the treatment of the scab. Randall, in his "Practical Shepherd," advises the use, in cold weather, of the mercurial ointment of

the shops, mixed with seven parts of lard, and rubbed upon the body in furrows made in the wool. It is not improbable that these preparations would be equally efficacious for lice, whatever they may be.

CLYDE, Kas., Dec. 24th, 1877.

Editor Industrialist:—I should like to propose a few queries to be answered in your paper in regard to blue-grass. My reason is that there has been none cultivated successfully in this part of the State, and we feel the need of a grass for early spring and late fall pasture. I hear that attempts have been made in the south part of the State to start blue-grass on large portions of prairie, but do not know what success has attended the efforts. Therefore, I propose the following queries: Will blue-grass succeed if sown on the prairie? At what time should it be sown? Will old seed grow as well as new? How long will it require to enable it to become sufficiently started to be of value for pasturage? A READER.

Blue-grass will succeed very moderately if at all when sown upon the raw prairie. If this prairie is pastured, and pretty thoroughly trampled by cattle and sheep, your chances for success will be greatly increased. Sow in the spring as early as oats are usually sown, and upon land that has been well prepared by plowing and harrowing. Old seed is always to be mistrusted. Get fresh seed if possible.

We have a two-acre field, seeded in the spring of 1875, that last year had an almost perfect sod, and one that furnished an immense amount of pasture during most of the summer. We should advise our correspondent to use a mixture of orchard-grass and blue-grass—seven pounds of the seed of each per acre—in seeding down his land. This mixture has with us always been more satisfactory than the use of blue-grass alone.—Prof. Shelton.

Common Air Liquefied.

We take it that none of our readers can fail to be greatly interested in the latest and most wonderful of scientific achievements, just accomplished in the city of Geneva and telegraphed thence over the civilized world. We refer to the liquefaction of all the gases, particularly of nitrogen and oxygen—the two principal constituents of common air.

To MM. Pictet and Cailletet is due the honor, if not of discovery, at least of accomplishing what has thus far resisted the most determined efforts of experimenters the world over. A clear account of the experiment is given in the last number of the *London Chemical News*, taken from the *Journal de Geneve*. By the use of liquid sulphurous acid (dioxide), gaseous carbonic acid was converted into a liquid at a temperature of 150° F. below zero, under a pressure of six atmospheres. This liquid carbonic acid was then conducted into a long tube from which by use of an air-pump the pressure was instantly removed, thus at once freezing the liquid into a snow-white solid. Through the center of this tube containing the solidified carbonic acid passes another smaller tube through which is thrown the gas (oxygen or nitrogen) upon which the experiment is being performed, under a pressure of three hundred atmospheres. And right here occurs the most interesting feature of the experiment. There is no evidence that even at this excessive degree of cold, or under this enormous pressure, any gas whatever was yet liquefied in the inner tube. But upon allowing this powerfully compressed and refrigerated gas to suddenly escape into the air through a small jet at the end of the tube, the instantaneous expansion was so great as to produce a cold estimated at 500° F. below zero, and the gases of the ordinary air we breathe were thus seen to dart out in a limpid, transparent, liquid stream. Of all the

so-called "permanent gases" submitted to this apparatus, hydrogen has been found the most difficult to liquefy, having thus far been obtained only as an "opaque mist." This would be expected when we remember that hydrogen ranks as the lightest and rarest of the elements.

As intimated, while this achievement must be ranked as one of the great experimental feats of this century, it can in no sense be called a discovery. Ever since the general acceptance of Joule's mechanical theory of heat, the forms of matter have been believed to depend solely upon the repellent power of heat as a force; that at a sufficiently high temperature all solids and liquids might become gases, and conversely, by removing heat and obtaining a temperature low enough, all gases might become liquids and finally solids. With the liquefaction of these gases, as described above, have been removed the last remaining objections to a full acceptance of this theory of matter. Now that the air around us has been converted into a liquid, it is only a question of time and means when we shall be permitted to see it as a solid,—hard, transparent and glittering as ice.—Prof. Kedzie.

Hints on Decoration. No. II.

An established but often abused principle of ornamental art demands that the object should itself be ornamental, rather than depend on applied ornament. Hence, the graining of wood is far less satisfactory as a decorative process than the bringing out and preserving of the natural grain. So the veneering of furniture with thin layers of mahogany, or other fine and costly woods, is a sham that gives us a feeling of disappointment whenever the cheat is discovered.

Veneering is at best a sort of trickery to give the desired appearance of luxury without possessing the means to purchase it. Display rather than solidity brought it into general use. The furniture-makers, essaying to please their patrons, flood the world with articles that, rich enough for a palace, have not the coherence of a house of cards, as garrets full of peeled furniture can testify, although there is not a cabinet-maker in a dozen who will not pretend that his veneering is fully as durable as the solid wood.

Veneering was all the rage in France under the Louises. At a time when everything else seemed hollow, when a Talleyrand, for instance, advanced the famous doctrine that language was made to hide ideas, whole rooms were veneered.

But even in our days we are driving in this direction admirably well. Successful imitation in every department of industrial art appears to be the main consideration with a number of manufacturers. Iron is made to resemble wood, wood to appear like iron, zinc to look like bronze, and wool like fur, while in articles of furniture even nails and joinings are imitated. It is only within the last score of years that attention has been once more directed to solidity. We have again begun to furnish our rooms in the sweet and cleanly light oak, and have learned that the once undreamed of yellow pine is not only one of the cheapest but also one of the most durable and attractive woods in existence—a soft, creamy body, varied with stains of deeper hue darkening into rusty red. We also have an abundance of black walnut, an exceedingly valuable wood on account of its durability as well as its color. Why, then, should we ever strive to imitate the abnormalities of Paris?

Carved furniture is much more substantial than veneering, and its light effects are even superior to those of gilding. From cornices and panelings, from church, library and parlor furniture, to cabinets, brackets and other ornaments, nothing can equal the artistic carving. Be the style the marked Gothic, the light Renaissance, or the fantastic Moorish, if it exhibits a proper dignity and harmony in all its parts and a subordination of ornament to structure, its effect is highly pleasing. Carving "in the solid" is the fittest manner of decorating furniture, and the rapidly growing interest now awakening for this branch of applied art is an indication of the aesthetic progress of our nation.—J. D. Walters.

Free High Schools.

Gov. Robinson, of New York, in his last annual message says: "The money raised by taxation for the schools of the State amounts to much more than double the sum required to pay the entire expenses of the State government,—executive, legislative, judicial, civil and military. The expenditure of so large an amount (\$10,976,234) of public money for any purpose is liable to lead to great abuses, as has been shown in all our past experience. In my judgment a very great wrong has already grown up in connection with our otherwise excellent system. It lies in the principle of applying large amounts of the moneys raised by taxation to the support of high schools and instruction in all the sciences and higher branches of study required in the learned professions. I can find no excuse for raising money by general taxation for such purposes. The only good reason which can be urged for taxing one class of citizens for the education of the children of another class, is the necessity of giving to the children of all classes a sufficient common-school education to enable them to understand their duties and exercise their rights as citizens of a free country governed by the popular voice. When we go beyond this, and take from one man the money necessary to educate the children of another man in the arts and sciences, we perpetrate an act of injustice under the forms of law. What is worse than this, instead of educating the masses of children so as to prepare them for the pursuits and industries upon which they must depend for a living, we educate them in such a way as to make them discontented with their condition, unfit to discharge its duties in a manner most beneficial to their own interests, and take away the strong incentives which impel those who are really able and worthy to win for themselves high positions in learning and usefulness. When the State has given to all the children a good common-school education, it should leave them to their own resources, and to follow such callings in life as their capacities fit them for. To go beyond this is to injure rather than to benefit them."

Gov. Robinson has given voice to a sentiment widely prevalent. In the State of New York, the free graded school system has been most fully developed. In every considerable village, a high school is maintained at the public expense. Throughout the State the courses of study in the primary, grammar and high schools are each considered segments of the grand circle completed by the curriculum of the college or university, which prepares for the so-called learned professions.

The normal schools, of which there are several, are constantly training teachers with a view of putting the individuals of each school generation through the same course of study. To a great extent the individuality both of teacher and pupil is ignored. The system has been so perfected that, to many, teaching is a mere mechanical process, and the pupil a mere machine to perform a given amount of work in a given time.

Very few individuals complete the grand circle of the system—a small fraction of one per cent. The segment of the circle embraced by the grammar school is completed by many; comparatively few go through the high school. But either is but a segment of a circle, not a circle complete in itself. Were this the case, there would be less reason to complain that "a large amount of the money raised by taxation is applied to the support of the high schools" for the benefit of the few.

This system as it now exists has been in operation in New York and some of the other Eastern States about twenty years. Many besides Gov. Robinson are inquiring whether the present disturbed condition of society is not in some way connected with our popular system of education. They ask whether the general aversion to manual labor, the prevalent dishonesty among those who boast of fair education, is not attributed to the fact "that the mass of the children have not been educated to prepare them for the pursuits and industries upon which they must depend for a living."—Prof. Ward.

THE INDUSTRIALIST.

SATURDAY, JANUARY 26, 1878.

The students' prayer-meeting last night was well attended and very pleasant.

And now it is W. C. Stewart who is happy. It is a boy, and arrived January 7th, 1878.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

We just wish that Web Wilder was back in Kansas, where he belongs. The article on "Industrial Education" from the St. Joseph *Herald* is his.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

The monthly examinations were held yesterday. The grade sheets of each department will be found in the class rooms on Monday morning, and the consolidated grades with the monthly average will probably be posted on Tuesday morning.

The calendar of the Agricultural College for 1878 will be as follows: The Spring Term opened on Thursday, January 3d, and closes Wednesday, May 22d. The Fall Term will begin Wednesday, September 4th, and close Wednesday, December 20th.

The classes are full and have all gotten down to regular and steady work. The first monthly examinations always have a good effect in showing each student how he compares with fellow students, and in spurring him up to greater effort. No term has started with a better promise of earnest and successful labor upon the part of both pupil and teacher.

The Board of Regents stands adjourned to meet Tuesday, February 12th. As one of the members will be absent from the State at that date, the inquiry has been sent to each Regent whether a change to Thursday, March 5th, would be agreeable to him. All have been heard from except one, and thus far the desire for the change is unanimous. This is the easiest way of reporting progress.

The list of offices and calls on the telegraph line the present term is as follows:

Platt.....	R.R.
Anderson.....	AN.
President's House.....	A.
President's Office.....	CA.
Mechanical Building.....	F.
Eckman.....	CK.
Wilson.....	WI.
Superintendent's Office.....	ST.
Hadley.....	HY.
Blain.....	B.
Post-Office.....	PO.
K. P. Depot.....	MN.
G. C. Wilder.....	BN.
Hoyt.....	Q.
Pillsbury.....	PR.
Johnson.....	J.

The old settlers of Riley county are making arrangements for a grand re-union and dinner at the court-house, in Manhattan, on Friday, February 22d, closing in the evening with a public meeting to be addressed by leading old settlers. There are a number of grey heads in Manhattan who cradled it in its infancy, and who have not only figured conspicuously in the early history of Riley county, but have associated their names with the stirring events and exciting times connected with the early settlement of the State. Manhattan is not only the "beautiful city" of the present; it is also a historic city. And we fancy that many hearts will beat faster on that re-union day, as the various incidents, trials, privations, etc., connected with the past are recalled and commented upon.

Friday, January 18th, the Alpha Betas convened in regular session, President Wilson in the chair. Miss Finney and W. D. Haines were initiated. Messrs. Sternberg and Younger were proposed for membership. The President-elect, A. A. Stewart, was examined and duly installed, and the usual valedictory and inaugural addresses followed. The *Gleaner* was presented, and, as is always the case, was full of well-composed articles and spicy locals. By an interesting and extended debate, it was proved that punishment does not produce any real repentance. At the next meeting this question will be debated: "Resolved, That more knowledge may be obtained by observation than by reading." Affirmative, George Perry and Miss Kinsey; negative, C. O. Smith and Miss Glossop. A. E. Wilson and Miss Bouton are the editors of the next *Gleaner*.

The Webster Society met Saturday evening as usual. After the opening exercises, Mr. Wood was

installed as Recording Secretary. Messrs. Mason, O. M. Wylie and J. M. Wylie were elected members and initiated. The debate was very interesting, and resulted in convincing the judges that Lincoln had done more for the good of his country than has Grant. Extemporaneous speaking followed with unusual interest, the capital punishment question being more freely discussed than any other. The orders of declamation, composition and reading were passed. The names of Messrs. Rollings, Moore and Thomen were proposed. Under the head of new business, the Society decided to change the order of exercises in two weeks to a moot-court.

The question for debate at next meeting reads: "Resolved, That Columbus deserves greater praise for discovering America than does Washington for defending it." Affirmative, Wylie, Godfrey and Beacham; negative, Scott, Anderson and Call. Criticisms were quite freely indulged in under the order of report of critic. After a pleasant session, and the practical application of much parliamentary law, the Society adjourned. REPORTER.

POOR MAN'S TELEPHONE.

We have been wrestling with the poor man's telephone again this week. The amount of perspiration that has "larded the lean earth" in our self-sacrificing efforts for the benefit of impecunious humanity will never be measured or properly appreciated. And we are going to fire the business end of our double-mule battery at the head of the very next gentleman who comes along and smilingly suggests that a wire would probably work better than a string. We have tried the wire twice. The first experiment was with unannealed broom-wire, and the result was a hard metallic "ringing" that would have done honor to a brass-throated donkey. This week we proposed to do the thing up brown. Of course the difficulty was in the hardness of the wire. Buying a coil (on tick), we turned it over to Prof. Kedzie, who fired up his patent furnace and roasted all the kinking and twisting proclivities out of that wire till it was as soft and supple as a political platform before election. And after burning everybody's fingers in the haste to string it up, the stuff was finally swinging between the buildings, and wouldn't do anything—it wouldn't even "ring."

A strong thread is good enough for us. The rich nabobs of Europe, who don't know what to do with their surplus income, can lavishly squander seventy-five cents in trying wire; but so long as our native land is afflicted with hard times, we shall patriotically stick to the string. Furthermore, the strain of the wire has stretched the sheepskins so much that they must be reset. But the "short-line route," the cheapest, most direct and speediest line, is the "old reliable." It has worked all the time—through rain, snow and tempest. No wire in ours, if you please.

Those who labor in the cause of science for the benefit of a cruel world have countless sorrows. With one eye to business and the other heroically twisted over to the eternal fitness of things, we had poetically designated the two tin cans and string arrangement as the "Poor Man's Telephone." And here comes the Hon. Frank A. Root, of the North Topeka *Times*, which the same is also postmaster, and kicks all our highfalutin overboard by calling it the "Can-can Telephone." Will some benevolent gentleman please kill him?

COLLEGE DRILL CLUB.

The Drill Club had a larger attendance of members and visitors last Thursday evening than ever before. The committee on jurisprudence reported that an appeal from the decision of the chair could be laid on the table, and that the maker of a motion could amend or vote against his motion but could not speak against it. A motion to accept a report is the same in effect as a motion to adopt, and, when carried, adopts the report.

The special committee on topics presented the subject of the manner of obtaining the floor, the rights of the member to whom the floor has been assigned, the five ways in which he can be interrupted, and the principles upon which his rights and those of interruption rest. Many questions of practical interest were asked by different persons, and in the discussion which followed the reasons for the several usages were clearly brought out.

A lively contest over the time of meeting resulted in a change from Thursday to Wednesday evening.

The fun began when the question of selecting a committee to do the janitor work of the Club, and fixing the compensation therefor, was taken up; and the chair was kept busy in putting amendments and deciding points of order until the question finally and funnily got itself settled to the satisfaction of everybody except the members constituting the committee, who were instructed to enter upon the discharge of their duties immediately. As the Club was about adjourning, a motion to reconsider the vote appointing the committee was made and entered upon the minutes. The point being raised that the pendency of this motion suspended the action of the original

motion, it was moved that the committee be required to obey the original order. A point was made that this motion was out of order because conflicting with the rules on "reconsideration." The question was referred by the chair to the Club for decision, which body went into the committee of the whole upon the subject. After much discussion and determined filibustering, during which latter a vivid realization was had of the motions which can't be made in committee of the whole, the committee arose and recommended the President to sustain the point of order. So the janitor boys came out ahead, rejoicing over the blessed provisions whereby a minority is able, at least for a while, to hold in check an overwhelming majority. Their opponents, on the other hand, were disposed to inquire whether a majority has any rights whatever, and if so how much. Both sides are at work on the manual, and the end is yet to come.

The meeting was the most profitable as well as the most interesting that the Club has yet held, and gives promise of many more like it.

Mr. L. A. Salter, son of ex-Lieutenant Gov. Salter, stopped over in town last night on his way from the Agricultural College to his home in Independence.—*Ottawa Journal*.

We take great pleasure in noticing the popularity of our friend Lou Salter. He is one of the best and most reliable young men we ever knew.—*Thayer Headlight*.

NATIONALIST ITEMS.

Prentis' lecture, at the Presbyterian Church, last Tuesday night, was really very fine. The church was full and the audience delighted; and this cannot often be said of a Manhattan audience. We advise everybody everywhere to hear this lecture at the first opportunity. We understand that Mr. P. may deliver another lecture here in the spring, and if he does, those desiring to attend will have to get tickets in advance—for no house in town would hold all who would want to go.

This splendid institution is doing a great work for the educational interests of Kansas. The winter term began January 3d. The sons and daughters of many of our farmers who are expecting to leave home to go to school, should send to President Anderson, of Manhattan, Kansas, for circulars giving full information as to the studies pursued, expenses and necessary qualifications to secure their admission to the school. The scope and character of the institution is fully set forth in the publications which President Anderson will send free to any applicant.—*Kansas Farmer*.

ENTERPRISE ITEMS.

M. S. Tyler has sold his house to Jesse Winchip. Consideration, \$5,000.

J. H. Keller, who was for some years commercial traveller for Campbell & Co., of Kansas City, has leased the Adams House, and will take possession about February 15th.

The K. P. Railway has given a rate of freight on stone so low that Ulrich & Son are shipping to Leavenworth, for the use of builders there, our fine magnesia limestone. Leavenworth has been receiving stone heretofore from Cottonwood Falls.

The lecture at the Presbyterian Church last Tuesday evening, by Mr. Prentis, was one of the best, if not the best, lectures ever heard in Manhattan. He was listened to by an audience of about four hundred persons, and frequently applauded. Those who listen to his lecture on Europe will never go away dissatisfied. Mr. Prentis has greatly improved in elocution, and his descriptive powers are excellent.

EDUCATIONAL CALENDAR ITEMS.

There are in the neighborhood of one hundred schools in session in Linn county, in as many first-rate school-houses that are paid for.

A writer in the INDUSTRIALIST thinks the adoption of the metric system would simplify book-keeping. Felter has already done this.

Forty-three public schools in Kansas have introduced Felter's Elements of Book-Keeping during the month of December. Send in your orders, gentlemen.

The *Chase County Courant* correctly advises: Teach your boys that a common-school education, with common sense, is better than a college education without it.

The class in Political Economy, at the Agricultural College, is now taking a brief course in parliamentary law. Turn all the boys, and girls, too, loose in that field.

School-district authorities can obtain the highest market price for their bonds, by addressing E. Gale, Loan Commissioner of the Agricultural College Endowment Fund, Manhattan.

The Osage City school district has purchased a library, and books are given out every Saturday afternoon from 2 until 6 o'clock. Only a half-mill tax was necessary to accomplish it.

Mound City has a new school-house, and all departments of the public schools are under one roof. The new building is a model of Kansas enterprise and skill. It is two stories high, and is 30x50 feet on the ground.

Felter's Elements of Book-Keeping will be used by the first-year class at the Agricultural College, this term, which began January 3d. The authorities of the College say it is by far the best textbook upon that subject now out.

The Neosho Falls *School Review* publishes the reports of classes, written, punctuated, put in type, and signed by the scholar at the head of the class. Good idea. It also publishes a composition by one of the girls, who also set it in type ready for publication.

J. D. Walters, in a communication to the INDUSTRIALIST, thinks that a five-cent meter rule placed in the pocket of every school-boy would be worth hours of argument in introducing the metric system. He wants school boards to procure a school set of the different units, and then use them.

The State of Kansas has recently received a certified list from the Department of the Interior of 8,680 acres of land for school purposes. These lands were selected by the State under the act of February 16, 1859, but suspended since 1863 for the reason that the townships for which indemnity was claimed were reserved for Indians. They are now granted to the State under the decision of the Indian Bureau, of August 14th, 1877. Almost all of said lands are in Lyon county.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend. A. A. STEWART, President.

MISS NENA M. WILSON, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

BERNHARD ANDERSON, President.

CLARENCE E. WOOD, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.
Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.
Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending January 24th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar. Mean.	Inches of Rainfall.
	Max.	Min.	Mean.		
Friday.....	18	49°	35°	44°.50	.05
Saturday.....	19	48	29	44	.40
Sunday.....	20	38	21	33.25	28.72 .05
Monday.....	21	46	26	35.25	28.83
Tuesday.....	22	41	18	32.75	28.98
Wednesday.....	23	45	23	35.50	28.73
Thursday.....	24	53	26	43	28.65

Average temperature for the week, 38°.92.

Range of temperature for the week, 35°.

Rainfall for the week, .50 of an inch.

CHURCH DIRECTORY.

BAPTIST.—Rev. S. Pillsbury, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. M. L. Ward, Sup't.

CHRISTIAN.—Rev. A. D. Goodwin, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 11 A. M.; Mrs. A. D. Goodwin, Sup't.

CONGREGATIONAL.—Rev. R. D. Parker, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Prof. J. E. Platt, Superintendent.

EPISCOPAL.—Rev. J. H. Lee, Pastor. Service at 11 A. M. every Sabbath. Sabbath School immediately after service; Rev. J. H. Lee, Sup't.

FIRST METHODIST.—Rev. R. Wake, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; L. R. Elliott, Superintendent.

SECOND METHODIST (colored).—Rev. J. S. Grifing, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School at 3 P. M.

PRESBYTERIAN.—Rev. Wm. Campbell, Pastor. Services at 11 A. M. and 7 P. M. every Sabbath. Sabbath School immediately after morning service; Rev. Wm. Campbell, Sup't.

TO BUILDERS.

THE INDUSTRIALIST.

SATURDAY, JANUARY 26, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Wamego Tribune*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Tribune*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

THE LAST CHANCE.

The Price of the Leavenworth Times Soon to be Two Dollars. Only a few Weeks at the Old Rate.

The Leavenworth Weekly Times for the last two months has been publishing a paper of fifty-four columns, with very few advertisements. It is now the largest, cheapest, best, and leading paper of Kansas, and has a larger circulation than any other paper in the State. We do not see how any man in the West can afford to be without the Times. Its market reports are correct, Kansas Items complete, miscellany select, editorials positive, and agricultural items especially adapted to the Kansas farmer.

When the proprietor expends as much money as he has done, \$1.00 a year does not more than pay for the white paper, and realizing the fact that the people do not care for a little extra money, provided they obtain all the news, the price of the weekly Times will be raised to \$2.00 on the 1st of March, 1878. But until that date all subscriptions will be received at the old rates, and those sending \$1.00 will receive the weekly Times for one year. Send your money immediately, and get the best paper in Kansas for one year for one dollar.

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The Farm Department offers for sale YOUNG SHORT-HORN BULLS of the highest breeding, together with JERSEYS and GALLOWAYS. Also, a very fine lot of BERKSHIRE PIGS, eligible to record and the get of the celebrated boars Lord Liverpool and British Sovereign II. We have also for sale a few choice ESSEX PIGS, straight Jos. Harris stock, of both sexes. Our prices place this stock within reach of the general farmer. Address EDWARD M. SHELTON, Sup't Farm, Manhattan, Kansas.

(11-tf)

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the INDUSTRIALIST by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

"It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact."

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas.

8-tf

The Kansas Publishing House.—A Kansas institution. Celebrated for Kansas productions. The only Kansas House to secure a Centennial award for quality of work. Kansas work, by Kansas mechanics, at this Kansas establishment. Pronounced "faultless."—Felter's series of School Records, made to comply with Kansas laws by a Kansas author and Kansas publisher. The best School Officers' Records in the market.—Felter's Elements of Book-keeping. The first Kansas text-book by a Kansas author and a Kansas publisher. Being rapidly adopted by the schools.—The Annals of Kansas, a marvellous history of Kansas, written and printed in Kansas.—The Educational Calendar, a beautiful monthly publication for the Officers, Teachers and Patrons of Kansas schools, for twenty-five cents per annum.—The best Railroad, County, Bank and Mercantile Blank Book work to be had anywhere, all done by Kansas mechanics. Our ambition is to build an establishment for Kansas equal to the best in America.

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The Educational Weekly.—The union of the School Bulletin and N. W. Journal of Education, Wisconsin; the Michigan Teacher, Michigan; the Illinois Schoolmaster, Illinois; the Nebraska Teacher, Nebraska; The School, Michigan; Home and School, Kentucky; The School Reporter, Indiana. Editors—Prof. Wm. F. Phelps, President State Normal School, Whitewater, Wisconsin, Editor-in-Chief; Prof. Edward Olney, University of Michigan, Ann Arbor; Hon. J. M. Gregory, President Illinois Industrial University, Champaign; Hon. Newton Bateman, President Knox College, Galesburg, Illinois. Managing Editor—S. R. Winchell, Chicago. State Editors—One in each of the Western States. The strongest consolidation of educational journals ever effected in this country. The broadest in its scope; the handsomest in appearance; the most varied in its contents; the freshest, strongest and latest of the journals of its class. Good for the teacher! Good for the scholar! Good for the citizen! Every department is in the hands of a special editor. Its "Practical Hints and Exercises" are invaluable to the teacher of any grade.

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To single subscribers 1 year, \$2.50; 6 months, \$1.50.	
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ANNOUNCEMENT!

In response to a general and urgent demand from the earnest, practical teachers throughout the country, and from many of the county superintendents in the West, we have decided to enter upon the publication of a monthly journal devoted exclusively to the practical work of the school-room. This demand has come from such teachers as need the help of our "Practical Hints and Exercises," but cannot afford to pay the subscription price of a weekly, and purchase, besides these helps, a great deal which is of no direct service to them.

We have decided, therefore, to republish from the WEEKLY all the helpful editorials, contributions, correspondence, exercises, etc., in a sixteen-page monthly of the size and style of the WEEKLY. And, to be consistent, we shall call this monthly visitor THE PRACTICAL TEACHER. The subscription price will be one dollar per year, in advance, or ten cents a single number. Ten numbers will constitute a year. In clubs of five or more, 75 cents a year.

In this publication our aim will be to meet that very common objection of teachers, that the educational journals do not furnish enough of what is practically serviceable to them in their teaching. The very best contributions available will be provided for its columns. The best methods of teaching the various subjects in the common-school course will be given by well-known teachers. Editorially it will be in the hands of Prof. Wm. F. Phelps, Editor-in-chief of the WEEKLY. The first number is now ready. It will be sent regularly to all who will send us a club of four at one dollar each. Address, THE PRACTICAL TEACHER, 170 Madison St., Chicago.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular work-shop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, or Engr

THE INDUSTRIALIST

VOL. III.

MANHATTAN, KANSAS, SATURDAY, FEBRUARY 2, 1878.

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THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13	1.13
Teachers	1.13	1.13
Professional education:		
Ministers	0.43	
Lawyers	0.55	
Doctors	0.73	1.71
Industrial education:		
In agriculture	59.13	
In manufacturing and mechanical	14.63	
In personal service	13.89	
In trade and transportation	9.51	97.16
	100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

"Gigantic Exposure."

Short Duration of the Prehistoric Age of the "Colorado Stone Man" - Entertaining Description of the "Birth-Place" of the "Remarkable Petrification."

[Special dispatch to the *Chicago Tribune*.]

NEW YORK, January 24.—The scientists who have expressed a belief in the "Colorado stone man" will probably regret their haste. A correspondent, writing from Elkland, Tioga county, Pa., charges that he has discovered substantial proof that the "Colorado Giant" was made there by George Hull, who made the "Cardiff Giant." This information was obtained from E. J. Cox, a justice of the peace, to whom Hull is said to have explained the *modus operandi* of his working. Hull moulded and baked his giant, expending, it is thought, \$10,000 or \$12,000 on it, which exhausted his means. Then he visited Barnum; and, shortly afterward, the object was shipped to Colorado Springs, where it was "planted." Cox was invited to see the figure Feb. 1, 1877, and in his description says: "The giant was lying on a board supported by saw-horses. A derrick-like structure stood over the kiln, and had been used to take the giant out. Barrels of plaster of Paris, ground bone, ground stone, clay, and other materials, were in the corners, and there were many plaster mouldings lying about and on shelves. Hull was in ecstasies. Said he: 'Don't tell me that the people won't be fooled by this.'

"Hull called my attention to the four inches of tail which adorned the extremity of the figure's backbone, and struck a match so that I could see it plainly. Said he:

"Cox, look at that tail. Take hold of it." Then rising (for we were stooping), he exclaimed: "That tail alone is worth a million!"

"I called his attention to the fact that the man was not perfect. He struck matches to show me the difference in the toes. He said it would not do to have the man perfect,—that there was nothing perfect about it. It had been made so as to have it not like anything ever discovered of the human or brute creation. The arms, he said, were made disproportionately long, so as to make it appear something between a man and an ape.

"He explained how he had used two hundred and fifty gross of steel needles, which had been fastened in lead, a dozen or so at a time, and with these he had gone over the entire surface of the figure before it was baked, producing that goose-skin appearance which has puzzled scientific men.

"Suppose," said I, "some scientist proposes to go into him, what are you going to do?"

"Oh," said Hull, "I've got that fixed," and he pointed to two places where he said the scientists could have a foot of surface to work on where they would be sure to strike bone. "If they want to go in anywhere else," said he, "we shan't let them."

The first idea was to bury the figure in Connecticut, but to this Barnum objected, and Colorado was decided upon.

All the arrangements for discovery were most carefully made, and the humbug was carried out with great success." Cox now peaches because he says Hull has misused him.

New Orleans and the Grain Trade.

New Orleans is now putting forth extraordinary efforts to attract the great volume of western exports through the market, which is causing no little concern in New York, for the fear is thus engendered that the metropolis may lose largely the control over shipments from the West. The shallow outlets of the Mississippi have operated adversely to New Orleans in the past, but the Eads jetties have resulted in securing a sufficiency of water for the largest-sized vessels. The Baring Brothers, in looking after the immense western grain trade, declare that they can take grain to Liverpool by New Orleans at much less per bushel than via New York. President Ackerman, of the Illinois Central, who has given great atten-

tion to the subject, expressed the opinion that the time has come for establishing a regular line of steamships between New Orleans and Liverpool to accommodate the export trade. He avows that by this new arrangement "grain can be carried from Chicago to New Orleans at about forty cents a hundred weight, and to Liverpool at about seventy cents."

We are glad to see New Orleans rising to the magnitude of the great question of grain exportation. The legitimate effect of placing a regular line of steamships in operation between New Orleans and Liverpool will be a reduction of tariffs by railroad, between the producing regions of the West and New York. It will make competition genuine, and not seeming, merely. Occasionally the railroads get into a war and for a time reduce their rates of transportation, but this does not last long. In the early part of last year the roads terminating at New York, frightened at the grain traffic which was turning to southern ports, made great reductions in tariffs, and wheat was taken from Chicago, by rail, to New York at nine cents a bushel, or three dollars a ton, lower than ever before carried.

What the people of the West want, in the absence of inter-State regulations, which will fix the prices of transportation, is a real and honest competition in the carrying trade. Experience has taught us that railroads more naturally combine for high rates, than to make war on each other. But with our steamships making regular trips from New Orleans to Europe, if the rail routes to the seaboard desire any amount of the carrying trade, their rates must be approximately low as the water route.

We hail with delight the activity and earnestness of the grain men of New Orleans in their efforts to make that city the great grain depot for foreign shipment, and since the "Father of waters" has been so greatly enhanced in worth as a commercial trade artery by application of the jetty system, the producers in Kansas and other western States may have some assurance of cheaper transportation for their productions than has ever before been afforded.—*Humboldt Inter-State*.

OUR readers are aware that some time ago gas companies everywhere felt somewhat nervous about the electric candle. In England gas stock fell considerable. It was seen that the project of substituting an electric light for gas was so nearly accomplished that its final success was only a matter of time. European scientific men are at work upon the problem, and private advices seem to indicate that such progress is being made that an important announcement may be forthcoming any day. Once the necessary appliances are perfected so that the electric candle may be as effectively worked upon a large scale as it is now upon a small one, we may then forthwith extinguish the gas, for of a certainty cheaper, safer, and in every way better light will have taken its place. The electric candle produces neither heat nor smoke, it cannot cause fire, and it is expected that it will produce a brilliant light at a nominal cost. That it will one day come into general use is pretty certain. We believe that day is nearer at hand than some people would like to think possible.—*Philadelphia Press*.

Practical Education.

Education should consist much more than it does in learning to do, to act, to perform. The successful men of the world are those who can accomplish the ends of life, who can by their own energy and skill bring about grand and useful results. Our educational institutions make us learned, cultured, but not sufficiently actors. One reason why very often the young men who have but little education from the schools surpass those who have lived for years in the College walls, is because they have been trained to action—action gives strength and health. Culture gives ease, grace and finish. They belong together, but have been separated. Let them be brought once more into some grand

scheme of education, and we shall have men and women as the result who can not only accomplish noble work, but be at the same time fine scholars, with cultivated manners, with grace and dignity of demeanor.—*Exchange*.

The Statistical Bureau of Berlin estimates that the total steam motive power of the world equals the force of 25,000,000 horses.

THE expenditure of the English government for education, science and art has increased from £26,750 in 1835, to £3,972,098 in 1875.

THE annual oil production of Pennsylvania is supposed to nearly equal in value the gold and silver productions of California and Nevada.

Iowa produces less than double the amount of wheat Kansas produced in 1877, yet Iowa has more than three times the population of Kansas.—*Wellington Press*.

MR. PRENTIS' book is to be published early in February, and is to contain, besides the letters from Europe, the author's lecture on "Pike's Peak," and his Agricultural College commencement address, entitled "The World a School."

THE growing wheat crop in this country was nearly all drilled, and some of it is even cross drilled and with good results. Drilling is growing in favor. The wheat in this country is looking magnificently, and promises a large yield next summer.—*Paola Spirit*.

MR. L. L. OSMENT, of Cleveland, Tennessee, is sending out samples of the wheat of Taos, or, as he calls it, the "Big Seed Wheat." He is advertising it all over the country. We saw last fall in our Texas exchanges that it was a fraud, that when ground it would not make flour, etc. We caution farmers against spending their money for it. We have a few kernels which we will give a trial and report progress.—*Commonwealth*.

Toads as Pets.

A correspondent of the *Gardener's Chronicle*, speaking of pets, says: "My first attentions were devoted to toads, and very few persons can believe how much a prepossessing creature of this kind can be taught. I had five; they knew me perfectly; they knew their own names; etc." The editor of this journal is reminded by the above that toads were among his earliest pets, and they, too, knew their names, and learned to come when called.—*Field and Forest*.

WE stated recently that in 1877 New Hampshire raised over two million bushels of corn. Mr. Boughton, in his hand-book, states that there is one county in Kansas that raised over four million bushels in 1877, two that raised three millions each, nineteen that raised over two millions each, twenty-five that raised over one million each; and that the entire State produced the enormous amount of over one hundred and three million bushels.—*Lawrence Journal*.

Boys, We Mean You.

For farmers the country wants the most energetic, thorough-going and wide-awake boys that can be found. Therefore, if a boy is blessed with that crowning concomitant which moves the world—brains—let him become a farmer. Brains constitute the great desideratum in agricultural science at the present day. Fifty years ago muscle was the essential requisite. When the labors of the farm were nearly all performed by the laborious and fatiguing application of human force, farming was irksome and drudgery. But now when teams and steam power respond to the bidding of the tiller of the soil, agriculture is the most agreeable pursuit one can desire. Boys, stick to the farm.—*Kingsley Republican*.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 2, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

We have heard a good deal of the sharpness of the Parsons *Broad-Axe*, and would be obliged if its editor would fling a sample of his hardware over this way,—handle-end first, though.

We are much obliged for the following flattering notice of the INDUSTRIALIST:

No standing armies are needed where intelligence prevails, and where the press is free to disseminate the principles of truth, morality and virtue among the people.

"That's us" every time; and all for only seventy-five cents a year, postage prepaid at office of publication!

NOBLE L. PRENTIS will delight audiences with his "Impressions" at Peabody on the 5th inst., Wichita 6th, Hutchinson 8th, and Great Bend 9th. In addition, he will delight any audience, any where, and at any time except meal-time—at meal-time he has a "previous engagement." These aforesaid any audiences can make arrangements for happiness by addressing Noble Lecturer, at Topeka.

The Largest Edition.

Please count us out. We have nothing to say on that subject. There was a time when the spirit prompted us to arise and let flash the effulgent glory of the INDUSTRIALIST, artistically toned down by the graceful veil of its inherent diffidence. That was when we increased our ordinary edition five-fold and for several weeks issued five thousand copies per week. Under such circumstances, most papers would have gone prancing and snorting around in the pride of their strength and greatness; but the INDUSTRIALIST didn't. It just let on that such achievements were every-day occurrences in its life, and had gotten to be so common as hardly to attract its attention or merit even a two-line item in its "valuable columns."

During that period we remember debating whether a proper regard for humanity, and a due respect for that obligation to increase the general stock of knowledge which rests upon all men, did not demand at least a double-leaded statement of our circulation. And, too, we recall the suggestions of conscience that an omission to chronicle this truth of history was tantamount to cheating posterity out of its just expectations; and, also, the vivid impression made by the warning of judgment that the retiring bashfulness of the INDUSTRIALIST would yet be the death of it, and then how would it feel!

But virtue has its rewards, and we are glad now that during those trying weeks of doubt and perplexity we followed the delicate touch of our finer nature, and didn't blow; because, since then, the question has been raised as to the size of the largest single edition which has been published in the State by a regular paper; and in view of the following facts, we would have felt rather cheap:

The Frankfort *Record* says that the last new-year's edition of the Atchison *Champion*, which consisted of eleven thousand copies, was the largest edition ever issued in the State. The new-year's edition of the Topeka *Commonwealth*, two years ago, was sixteen thousand.—*Junction Union*.

Hold that mule! Look a leedle out, Mr. Prouty. The Parsons *Sun* issued of its holiday edition two years ago 25,000 copies. There have been more copies of the *Sun* issued, though it is among the comparatively younger papers, than of any other weekly in the State, or the weekly issue of any daily in the State since the morning stars first sang together. Put that in your pipe, Mr. Prouty, and smoke it!—*Parsons Sun*.

Hold your own mule! The *Times*, dur-

ing the last gubernatorial campaign, issued an edition of seventy bundles of paper—being nearly sixty-eight thousand copies; and they were not given to merchants by armfuls to be used for wrapping paper, but were all mailed from the *Times* office. Put that in your pipe, Mr. Kicking Bird, and see how it smokes.—*Leavenworth Times*.

P. S.—Say! hold on! Give us a fair count! Any body can see that the *Champion*, *Sun* or *Times* is five times larger than the INDUSTRIALIST; and, therefore, that if we had published as much matter as they did, our five-thousand edition would have been twenty-five thousand; that we could easily have furnished the matter, only the sheet wasn't large enough—which was a misfortune rather than a fault; and, therefore, that to all intents and purposes, at least so far as the moral quality of the action goes, our edition was really the largest (as it were),—if not in paltry numbers in the greater credit we deserve (or words and figures to that effect) for—for—for what we would have done—if—if the press—

Somehow this thing doesn't figure out the way it said it would when it started; and, besides, we don't just see how to get over that 68,000 edition. Yes! count us out!

A Definition Explained.

Every school-boy who is well on in his arithmetic will tell us that mathematics is the science of magnitude, or the science which has for its object the measurement of magnitudes. Let us try to comprehend the meaning of this definition. Magnitudes are of one dimension, as the line; of two dimensions, as the surface; or of three dimensions, as the solid or volume. If we wish to ascertain the distance between two points that are accessible, we apply some known length, as the foot or the yard, to the line that connects those two points; that is, this distance is compared with some distance already known. This is the *direct method* of measurement. By this method we are required to pass over the whole extent of the line measured. The process is wholly mechanical. A child who has merely learned to count, and who can skillfully handle the measure, can perform direct measurements as well as the most profound mathematician.

If we were restricted to the direct method of measurements, how very few distances could be determined. The height of trees or mountains, the depth of chasms, the width of rivers, could not be ascertained. Nothing could be known of those vast stretches of space between us and the heavenly bodies. Astronomy as a science would not exist. Direct measurement is possible only when the whole extent of the distance measured can be traversed. In the measurement of surfaces, volumes, velocities, times and forces, the method of direct measurement can seldom be adopted.

Nature presents numerous obstacles which must first be overcome. Many of these have already been surmounted. The pure mathematical figures must have early arrested the attention of man. Their properties were soon discovered. The relation which similar figures sustain to each other became known. Thus arose what is called the indirect method of measuring magnitudes. The indirect method consists in connecting, in some way, those magnitudes which do not admit of direct measurement with those that can be measured directly.

In many cases the magnitude sought for cannot be connected with those already known, but its relation to some other magnitude can be ascertained, which is relative to some other magnitude, and so on. In many instances the human mind is obliged to establish a long series of intermediates be-

tween the system of unknown magnitudes, which are the final objects of its researches, and a system of magnitudes which is susceptible of direct measurement. A simple case of indirect measurement is the application of the law of falling bodies. In this instance we have two quantities—vertical distance and time. In the language of mathematics, each is a function of the other; that is, the greater the distance the greater the time. This being the case we can substitute the direct measurement of the one for the indirect measurement of the other. Thus, by counting the number of seconds that a heavy body requires to reach the depths of a chasm, we can determine the vertical distance with more precision than we could directly measure an equal horizontal distance on the surface of the earth.

Again, let it be proposed to measure the exact distance between two inaccessible objects on the earth, or the distance between two of the heavenly bodies. This distance may generally be conceived as forming one side of a plane figure,—usually of a triangle,—the remaining parts of which are known; and thus, by an application of the principles of the triangle, the line can be exactly measured. By these indirect methods of measurement, man has been able to ascertain the distance of the planets from the earth, their distance from each other, their times of revolution, and their exact volumes.

These illustrations show us something of the extensive scope of mathematics. The unknown is discovered by finding out the relation it sustains to the known. In his search for these relations, the range of the mathematician is as extensive as the material universe. To the discovery of these relations have been devoted the energies of the best minds of all ages of the world. These discoveries systematized are the mathematics of the present day.—*Prof. Ward*.

A Kansan Abroad.

Everybody will be glad to know that Mr. Geo. W. Martin, Publisher, Topeka, announces as in press a new book by Noble L. Prentis, entitled "A Kansan Abroad." It will contain the letters first published in the *Commonwealth*, under the title of "Prentis in Europe," with some new ones; an interesting address delivered under the auspices of the Kansas State Historical Society, on "Pike of Pike's Peak;" and one of the finest Commencement orations that has been made for years, "The World a School," delivered before the State Agricultural College, May 25th, 1875. The volume will be 12mo. size, 225 pages, on tinted paper, full muslin binding, and embellished after a design by another and celebrated Kansan, Henry Worrall. Price, by mail, \$1.25. It will be gotten up by Kansas printers and binders of the highest skill, and in the Kansas Martin's best style, which is a great deal better than any eastern publisher's best style on the same class of work. It is impossible that a work which has so much Kansas in its author, artist, craftsmen and publisher can be either bad or indifferent: from the eternal nature of things it must be good.

The typical Kansan differs as greatly from other gentlemen as does a Knickerbocker from a New Englander. He is a man who scans things as rapidly and minutely as does an Indian on the trail; who thinks so easily and reaches conclusions so swiftly that the act is rather intuitive than a process; who grasps the idea some lumbering eastern chap is trying to express, before the old coach has gotten half through his sentence; who has a subtle appreciation of truth, right and beauty that pounces on shams like a cat on mice; who has a

sense of the humorous as sharp as a bee's sting and as rollicking as a wild Irishman; who has a reasoning power as strong as the heels of a mule, and a soul warm, great and cheery as the sun; who has the grit of a bull-dog, the courage of a grizzly, the independence of a whirlwind, and the firmness of a mountain. It is because of the happy combination of these princely elements in a vigorous body, that the typical Kansan has a right to be conscious of his superiority to the citizens of other States, though his modesty keeps him from asserting the fact.

When other people go to Europe, they see those things which the guide-books direct them to see, and do it with all the machine stupidity that characterized the statistical old owl who made the guide-book—whose intellect, by the way, had about as much to do in making the book as the brain of a hen has to do with making an egg. And when these people write letters to the eastern press, they furnish so bad an imitation of the horrible copy set by the old owl that sensible people turn away in disgust. This is the reason why books of European travel have heretofore been dreariness personified and dressed in dates. The stream cannot rise higher than the fountain, and therefore sense, freshness and fun are not to be expected in books written by eastern chaps.

But even these stupids can understand that A Kansan Abroad is a wholly different being. His power to see is as different from theirs as is the eye of the eagle from that of the g-hopper. To him the guide-book is not a military order from the general commanding, but only an advertisement; and he always reserves the right to reject any or all advertisements. He wears the hat that bothers him least; is equally at ease in the hotel "Grand" or the "Pig and Whistle;" pays for what he buys and buys what he chooses; walks, busses or railroads at his own sweet will; goes where he royally pleases, stays as long as he wishes, and leaves precisely when he gets ready. He sees for himself, with his own eyes and in his own way. He does his own thinking in exact accordance with the laws of his nature, and in all the freedom of an American sovereign. He describes what he sees in every-day English, and prefers ideas to mere words, vivid imagery to threadbare phrases, and flashing thoughts that thrill through the soul—because darting from out a real soul—to rounded sentences. He pokes fun at foibles, knocks the hat off shams, shells vice, and makes a bayonet charge on iniquities. He looks at the people he meets as men, rather than as Englishmen or Frenchmen. In his view, brain, push and thrift are the same under all flags; manhood and greatness are equally noble under all garbs; virtue, beauty and wit equally charming on all soils. And with a splendid courage that rises above his own preconceived notions, above the prejudices of his countrymen, above the irritating conceits of the people he travels among, the Kansan Abroad is true to himself and to truth, speaking eloquently and lovingly of the noble things in nature and nations, as well as justly of the despicable things.

We don't mean to say that Prentis possesses to the outer extreme each and all of the qualities as above set forth in the typical Kansan. But we do mean to say that we had him in "the mind's eye" in sketching the type; that his letters and lectures have moulded this article; that what has been said is far more real than fanciful; that we would rather read after him than Bayard Taylor; that "A Kansan Abroad" will hugely delight thousands of Kansans at home, and be eagerly welcomed by thousands of others who have almost brains enough to become Kansans.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 2, 1878.

"Oh, the snow, the beautif—." He is dead.

There is a good deal of wet lying around loose.

Prof. Gale has been confined to his room this week with the chills.

We hear that there is a "Youth's Casket" published at Junction City. Why don't you send us a copy, Mr. Casket?

A large and interesting prayer-meeting last night, conducted by Prof. Platt, and participated in by many students.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

From February first to the fifteenth is the best time to plant early subscriptions for the INDUSTRIALIST, seventy-five cents a year.

We have received the first number of "The Hatchet," a three-column paper, neatly gotten up, and published in the interest of the Emporia schools.

We had a pleasant visit this week from Mr. J. G. Otis, District Lecturer of the State Grange, who is strongly and sensibly interested in the question of industrial education.

By unanimous consent the meeting of the Board of Regents, set by adjournment for February 12th, is postponed to Tuesday evening, March 5th, the same hour—seven o'clock.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

About a thousand years ago, more or less, somebody borrowed our copy of Roget's Thesaurus of English Words; and if it's all the same to him we would like to use it a few days, after which we will return it—may be!

Everybody returns a vote of thanks to Prof. Shelton for having the snow removed from the walk between here and town last Wednesday morning. All the disagreeableness connected with getting to and from Manhattan was by this means removed.

This is what a sensible man in Marshall county said about the INDUSTRIALIST, when he ordered it sent to him for a year: "After seeing a copy of your little paper, we came to the conclusion that it was well worth the money." Who will be the next lucky man?

John Davis, a dentist in LaFayette, Indiana, and son of one of our best citizens, pleased his parents and old friends by putting in a very unexpected appearance on Thursday evening. Mr. Davis graduated from this Institution in 1874, and has since been very successfully engaged in the practice of dentistry.

The Mechanical Department is building an elegant piece of furniture which combines in itself the latest agony in the way of an office desk, with all the shelves, drawers, pigeon-holes, etc., and a handsome book-case with glass doors. The order is from private parties, and the workmanship is Mr. Hawkes' best,—which can't be beaten by anybody.

At the regular meeting of the College Drill Club last Wednesday evening, the following officers were elected for the ensuing three weeks: President, A. N. Godfrey; Secretary, L. A. Salter; Marshal, G. A. Gale. An interesting session was held. The principles governing the chair in assigning the floor and the different ways of modifying a motion were the topics under consideration. The latter subject will be continued at the next regular meeting.

The stockholders of the New York Tribune Company have continued Whitelaw Reid in Horace Greeley's old position for the next five years, thereby showing the best of sense. His energetic management of the Tribune has placed it in the first rank of American newspapers, and no one of them has fresher news, more fire, or better talent. In another column will be found its announcement for the coming year, which speaks for itself, as the Tribune emphatically and habitually does for itself.

During the month of January the following students reached the first rank, grading between ninety-five and one hundred in all recitations:

Hattie Allen, Cherokee county; Bernhard Ander-

son, McPherson county; Arthur T. Blain, Riley; Estella Bouton, Greenwood; Lewis Call, Shawnee; Henry Coe, Missouri; Jennie A. Coe, Missouri; Jasper G. Cowell, Clay; Albert F. Dickson, Johnson; James B. Dickson, Johnson; Wilmer K. Eckman, Osborne; Ellen Fletcher, Riley; Albert N. Godfrey, Lyon; Silas C. Mason, Ottawa; Emma L. Parish, Riley; George L. Platt, Riley; Corwin J. Reed, Pottawatomie; Lewis A. Salter, Montgomery; Wm. H. Sikes, Pottawatomie; Clement O. Smith, Lyon; George H. Storch, Atchison; H. W. Thorne, New York; Ella E. Vincent, Riley; Amos E. Wilson, Dickinson; John H. Winne, Riley; Clarence E. Wood, Riley.

This week, and for a couple of months to come, the INDUSTRIALIST desires to make the acquaintance of teachers in different parts of the State. It does so for the purpose of giving them information respecting the facilities and methods of that one of the State's educational institutions which is maintained for the practical education of those who expect to engage in an industrial vocation. The farmer is as much entitled at the hands of the State to a thorough education for his business, as is the lawyer for one preparatory to his business. And as the work of the farmer differs from that of the lawyer, so should the presentation of knowledge differ. The INDUSTRIALIST presents these differences from time to time, as well as other matters.

We are sorry for the writing clerk of the *Educational Calendar*, S. A. Felter, editor, and George W. Martin, publisher, Topeka, issued monthly for only twenty-five cents a year,—which the same is always brimful of Kansas educational news,—but the aforesaid mailing clerk has got to die! Several weeks since, we notified that outfit to send three copies regularly to the INDUSTRIALIST; last month we only got one, and this month, so far, none. It makes no difference whether he is an orphan, or a single man, or a double man, his doom is irrevocably sealed. After his funeral we shall calmly wait a month, and if there is no improvement, Governor Anthony will find it necessary to fill a vacancy in the office of State printer, vice Geo. W. Martin, murdered.

The Alpha Beta Society called to order January 25th, by Vice-President Geo. A. Gale. Messrs. Younger, Sternberg and McBratney were initiated. Debate upon the subject, "Resolved, That we gain more knowledge by observation than by reading," was spiritedly discussed; decision given in favor of the negative: Select reading was given by Charles McConnell, essay by H. F. Coe, and declamation by A. H. Stiles. Under extempore speaking, the subject of woman suffrage was thoroughly and wittily discussed.

At our next meeting Frank Sternberg and Hattie Allen on the negative, and Wm. McBratney and G. A. Gale on the affirmative, will debate the question, "Resolved, That it would be to the interest of the United States to adopt the free trade system." *Gleaner* to be presented next week by A. E. Wilson and Miss Estella Bouton. We were pleased to notice so large an attendance, the room being entirely filled. Come, all.

In spite of the storm, the Websters met Saturday evening as usual. Messrs Moore, Rollings and Thomas were elected members. The question, "Resolved, That Columbus deserves greater praise for discovering America than does Washington for defending it," was very hotly contested. The gentlemen on the affirmative claimed that Columbus deserved great praise for his self-sacrificing efforts to discover a new continent; but the negative claimed that these were of no importance compared with the self-sacrificing spirit of Washington during the Revolution. And when the affirmative claimed that Columbus deserved great credit for discovering such a great and glorious continent as we have here to-day, a wicked man on the negative ventured to suggest that a "thick-headed Norseman did the business" some four or five hundred years before Columbus. It is unnecessary to multiply words; the decision of the judges was unanimously in favor of the negative. Extempore speaking followed with much interest. Mr. Call read an essay and Mr. Hickey declaimed. A committee appointed to draft a programme for the moot-court reported that Messrs. Reeve and Beacham act as plaintiff and defendant, and that the case be a suit brought for damages incurred by plaintiff's cattle breaking into and destroying defendant's crops; the President, Secretary and Marshal of the Society to fill the respective positions of Judge, Clerk and Sheriff; the principals to have the privilege of choosing one attorney and two witnesses each. After a pleasant meeting, the Society adjourned.

REPORTER.

President Anderson, of the State Agricultural College, gives his impressions, in the above extract, of the lecture Noble Prentis is now delivering in this State. We have heard many other gentlemen of fine literary culture express equally complimentary opinions of this lecture. In fact, we have rarely heard any lecture spoken of in such enthusiastic terms, either by the journals of the State or by individuals who have heard it. If there is connected with any of the societies of this city, a lecture committee, we think it would be well to see if arrangements cannot be made to have Prentis de-

liver his lecture here. A large number of our people would, we are sure, be glad to have an opportunity afforded them of listening to it.—*Atchison Champion*.

During the holidays we made a flying trip on the Kansas Pacific Railway as far as Manhattan, and while there visited, under the friendly guidance of Mr. Stanton, of the Adams House, the State Agricultural College. Unfortunately for us, we found none of the Faculty of the College at home, but were well repaid for our visit after all. We were greatly surprised at the extent as well as the excellent quality of the means of teaching the youth of Kansas the branches thought necessary in the liberal State for the education of its working class, such as cabinet-making, the manufacture of agricultural implements, telegraphing, printing, practical geology and chemistry, music and sewing. The chemical department, under Professor Kedzie, is one of the most complete and best adapted to the purpose we have ever seen. Upon visiting the office of the INDUSTRIALIST, which is edited by President Anderson, we found several of the students busily engaged in setting type, and the quality of the work done by them is sufficient evidence that they are in the hands of good and faithful instructors in this department as well as all the others. Kansas has reason to be proud of its public schools, of all grades, from the University down to the district schools away out on the borders.—*Kansas City Review of Science and Industry*.

NATIONALIST ITEMS.

Messrs. E. B. Purcell, H. Kearns and Wm. Haskins shipped eight cars of stock from this place on Monday.

Six more Sabbaths before the term of Rev. R. Wake's pastorate expires. He has been a hard worker in every good cause.

What an appreciation there is between the people and the pavement this slippery weather, and how near and dear they are to each other, to be sure.

The snow-storm of the season came on Tuesday, and Wednesday A. M. found the ground covered to the depth of several inches, and damp enough for good sleighing.

The farmers took advantage of the improved roads on Friday, and we saw at one time five teams heavily loaded with grain on the Blue river bridge at once. All day the town was unusually lively.

Ambrose Todd is excavating the cellar, etc., for a stone dwelling on his place west of the new College farm. The foundation walls will be put in at once, and the rest of the mason work done some time this summer.

THE MURPHY MOVEMENT.—Hon. E. B. Reynolds, of Indiana, will commence a series of temperance meetings in this city, on Friday, Feb. 15th. Mr. Reynolds is now laboring in Kansas City with great success. Five thousand have signed the pledge in that city since the meetings commenced. Let all friends of the cause in and around Manhattan rally in this movement.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industries" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice,

which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Supt. Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending January 31st, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.
	Max.	Min.	Mean.	
Friday.....	25	46°	25°	36°.25
Saturday.....	26	40	24	36.75
Sunday.....	27	51	25	39.25
Monday.....	28	37	27	31.75
Tuesday.....	29	38	25	32.50
Wednesday.....	30	35	22	31
Thursday.....	31	35	18	38.25

Average temperature for the week, 35°.10.

Range of temperature for the week, 33°.

Rainfall for the week, 1.41 inches.

Snow-fall for the week, 6 inches.

TO BUILDERS.

Sealed proposals for the erection of a building for the Kansas State Agricultural College (estimated cost about \$12,000) will be received by the undersigned until seven o'clock P. M., on Tuesday, February 12th, 1878. Plans and specifications can be seen after February 1st at my office in Manhattan, and at the office of E. T. Carr, architect, Leavenworth, Kansas. Bids will not be considered unless guaranteed by parties of known responsibility. The right is reserved to reject any or all bids.

N. A. ADAMS, Secretary.

Manhattan, Kan., Jan. 15th, 1878.

Clothier.—Wm. Knostman, dealer in Ready Made Clothing, Hats, Caps, and Gents' Furnishing Goods. A well selected summer stock on hand. Opp

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 2, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

In winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.— *Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paula Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Elk County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault of either the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

THE LAST CHANCE.

The Price of the Leavenworth Times Soon to be Two Dollars. Only a few Weeks at the Old Rate.

The Leavenworth Weekly Times for the last two months has been publishing a paper of fifty-four columns, with very few advertisements. It is now the largest, cheapest, best, and leading paper of Kansas, and has a larger circulation than any other paper in the State. We do not see how any man in the West can afford to be without the Times. Its market reports are correct, Kansas Items complete, miscellany select, editorials positive, and agricultural items especially adapted to the Kansas farmer.

When the proprietor expends as much money as he has done, \$1.00 a year does not more than pay for the white paper, and realizing the fact that the people do not care for a little extra money, provided they obtain all the news, the price of the weekly Times will be raised to \$2.00 on the 1st of March, 1878. But until that date all subscriptions will be received at the old rates, and those sending \$1.00 will receive the weekly Times for one year. Send your money immediately, and get the best paper in Kansas for one year for one dollar.

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IV. A Northern Farmer on *Southern Agriculture*, by SOLOMON ROBINSON.

V. *Life and Sights in New York*, by Veterans of the City Staff.

These articles will not be mere reproductions from the daily papers. They will be prepared expressly for THE WEEKLY TRIBUNE, and will first see the light in its columns.

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The Agricultural Department of THE WEEKLY TRIBUNE has always been recognized as beyond

comparison with that of any rival. More good work and more money are now spent upon it than ever before. Among regular contributors to it are Professor JAMES LAW, the country's foremost veterinary authority; Professor L. B. ARNOLD, unequalled as an instructor in the fine art of dairying; Professor G. C. CALDWELL, of national reputation as an agricultural chemist; Professor C. V. RILEY, the well-known entomologist; Mr. JOSIAH HOOPES, the horticultural authority, and other agricultural specialists of the highest rank.

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M. L. WARD, Prof. Mathematics and English.
WM. K. KEDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Pract. Agricul., Sup't Farm.
E. GALE, Prof. Botany and Horticulture.
J. E. PLATT, Prof. Eleme'y English, Mathematics.
JNO. D. WALTERS, Teacher Industrial Drawing.
A. TODD, Sup't

THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, FEBRUARY 9, 1878.

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THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13	1.13
Teachers.....	1.13	1.13
Professional education:		
Ministers.....	0.43	
Lawyers.....	0.55	
Doctors.....	0.73	1.71
Industrial education:		
In agriculture.....	59.13	
In manufacturing and mechanical.....	14.63	
In personal service.....	13.89	
In trade and transportation.....	9.51	97.16
	100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

A Visit to the Agricultural College.

Having an hour to spare, during a visit to Manhattan, we spent it in interviewing the Agricultural College and farm. On leaving, we were strongly impressed with the fact that however much disposed to find fault with or underrate this institution some men may be, it would be both creditable and profitable to the farmers of the State if they make an effort to inspect their "University" oftener than they do.

We had not the pleasure to meet a "professor," and ocular demonstration made a sorry show at satisfying our thirst for explanations, information and results of experiments. The farm and grounds have an air of thrift, good management and practical business. The new barn is in every way worthy of commendation, and is a model for the farmers of the State. Evidently all the internal arrangements were not complete, but quite enough to prove to old and new school farmers that stock of all kinds can better serve the purpose of their existence under such civilized conditions than having to pick their living from snow-drifts in the shelter of a hay-stack.

Nor, methinks, would John Cattleman object to feeding in the dry, warm house, or milking out of the snow and cutting nor-easters, if he had to tend three times as many head of stock.

The specimens of stock are mostly of the right kind for the ordinary farmer. I am convinced that it is time and money wasted to keep breeding and fattening the Texans, or even our greatly improved "natives," when from these Durhams and Aberdeens a thirty-three months' steer can as easily be brought to dress ten to twelve hundred of prime beef as the grade Texan to nine hundred at four years old; but the grade from these two is better yet for beef qualities, and without in the least disparaging our present stock, this is what the western stock-raiser must and will come to in the future.

In hogs, the specimens are also good, especially the Berkshires. We expected to find a greater number and variety in this department, and to learn what breed proves best for the average farmer. As with the cattle, our experience gives the grade Berkshire and Poland-China the very first rank for pork growing.

The building itself reflects great credit on some one. Built and fitted up in a thorough and substantial manner with the view of having convenience, comfort and health, it proves that the Faculty have not soiled their fingers with a nuisance or "steal" of the public money, and also that in a State so rich in material as Kansas no stock-raiser has an excuse for being without a good barn.

On reaching the Industrial Department, Mr. Stewart met us and escorted us through the whole, so that we made diligent use of his polite attentions in hearing and answering questions.

Verily the world moveth. The last generation knew nothing of such seats of agricultural lore. And it seems to me the present one (in Kansas) barely appreciates the full value of those houses on the hill.

If the Faculty and farmers would agree to hitch teams and pull true together, there is hardly a limit to the improvements they can effect within the next decade.—A. M., Wakefield, Kansas, in *Kansas Farmer*.

The World as It Is.

The sinking heart of many a young man as he has stood in the midst of the surging, careless, seemingly selfish, rude, well-nigh merciless crowd for the first time, has told him that the world is no green college campus; that the men he must meet day in and day out, with whom and from whom he must earn his daily bread, are not professors or students; are not men of culture; that they are not interested in the woes of Greece, but are vastly concerned about their own woes, their own business, and their own dinners. Stand where meet the thronged ways in any great city, and notice what men carry in their hands, or under their arms, or in their breast pockets, and you

will find out something about this world. Here goes a painter with his bucket of white lead; there goes a carpenter with his square; here passes an Italian with a board on his head, covered with plaster of Paris figures; here, one after another, pass a dozen clerks with pencils over their ears, and bits of paper in their hands, and papers sticking out of their pockets; shop boys pass repeatedly with bundles; here walks a round-shouldered chap with the end of his right thumb and finger discolored and worn off a little—he is a printer, and takes a brass composing-rule out of his pocket and puts it back again; men pass with hods, with mortar-boards, with trowels; there may pass once in a while a young gentleman, a smile irradiating his classical features—that is a reporter, going to congratulate with the coroner over an approaching inquest.

This little panorama shows how men live; how you, my friend, with the bright and shining diploma, must live. Suppose you wish to find out what these men know. Quote, if you please, something from Homer, in the original Greek; something affecting; the best thing there is in the book about Achilles' wrath and the woes of Greece. Try this on the most intelligent-looking man who passes, and if he is a Kansas man—as he probably will be if he looks uncommonly intelligent—he will look at you in a pitying way, and remark that it is a burning shame that the insane asylum at Osawatomie was not enlarged, or a new one built, years ago. It is evident that the gentleman does not know Greek. And if you will look further you will find before long a man in the crowd who cannot translate the simplest Latin sentence, who nevertheless has a diploma at home written in that language. But the trouble is, that shortly after his graduation, the exigencies of life obliged him to cease to trouble his head about how long Cataline intends to abuse our patience, and, abandoning all concern about the woes of Greece, he went into the soap-grease line of business. A few moments, then, passed where men may be seen about their ordinary vocations, shows us that the world, which we have said is a school, is likewise an Industrial School. A vast majority of men are engaged in industrial pursuits, and this, too, without regard to the circumstances of their early education. To this complexion men must come at last.—From "The World a School," in "A Kansan Abroad," by Prentis.

A Railroad Velocipede.

Mr. Johnson, a traveling musician, being in Garland, Col., and anxious to depart, manufactured a railroad velocipede with which he proposes to travel into Texas. Having become possessed of two two-wheeled velocipedes, such as were in common use a few years ago, he proceeded to fasten them together to run on a railroad. Wooden axles were constructed so that the machine could be adapted to any gauge of track, a broader tread was placed on the wheels, to which were added flanges made of whisky barrel hoops, levers were fitted to give means for using the hands as well as the feet to gain motive power, the whole arrangement was given a coat of red paint, and it was placed on the track at Garland ready for service. The operator sits on a seat resting across what were the two seats of the old velocipedes.

Johnson mounted his novel traveling apparatus at Garland, and arrived here without accident, having made the trip at the rate of about 15 miles per hour. He remained in this city a day or two, and, altering the gauge of his car to suit that of the Atchison, Topeka and Santa Fe Road, he started out on Friday afternoon for the East. Our informant tells us that he saw Johnson near Goldsmith's ranch, and tried to keep up with his car on a good horse, but the animal was soon distanced. The engineer of the eastern-bound passenger train met Johnson at Apishapa yesterday.

Johnson is an old railroad man, and always provides himself with a time card so

that he can keep out of the way of the regular trains. His apparatus is so light that it can be moved from the rails in a moment.—*Golden (Col.) Globe*.

Rain-fall in Central Kansas.

The Kansas Pacific railway land department has issued the following circular:

OFFICE LAND DEPARTMENT, K. P. R. W. }
SALINA, KAS., Jan. 23, 1878. }

To land agents, K. P. Railway:—We have obtained the following information from the forts named below, certified by the officers in charge, for the purpose of correcting erroneous statements made by agents who have land for sale in other parts of this State:

Statement of rain or melted snow, in inches, at forts Hays, Larned and Dodge, for the last five years, as shown by the daily meteorological records kept by the United States government at the posts named:

	Central Kansas.		Southern Kansas.
Years.	Ft. Hays.	Ft. Larned.	Ft. Dodge.
1873	21.52	19.23	19.00
1874	37.06	27.73	23.05
1875	32.08	17.80	16.36
1876	36.90	18.49	21.55
1877	35.40	31.89	31.48
Total	162.96	115.14	111.44
Average	32.96	23.03	22.29

Yours Respectfully, S. J. GILMORE,
Land Commissioner.

Classics Don't Count.

"Now, your Honor, we must consider the *animus furandi*," said a Police Court shyster, who was eloquently defending a chicken thief yesterday.

"What's that?" inquired the Police Justice, dropping his spectacles in astonishment.

"I am not here, your Honor, to answer conundrums," responded the barrister with asperity. "I am here to acquit this colored gentleman of the foul charge of stealing six Brahma chickens."

"Latin quotations are not admissible in a chicken case," said the Justice thoughtfully. "The sentence of this Court is ninety days in the House of Correction."

The defendant looked wild for a moment, and then, turning from his counsel in disgust, muttered: "I dun gone frowed \$2 away dis time, shuah."—*Detroit Post*.

A BILL recently offered in the Iowa Legislature proposes to direct the authorities of the State University to make the law and medical department of that institution self-sustaining. This is the beginning of a reaction that will put an end to the efforts—for the past few years quite common in the West—to sustain departments in public schools at the cost of tax-payers, for the purpose of training young men to certain professions. No greater abuse of the power of taxation is to be found anywhere than that which levies upon the whole community the cost of setting a few favored persons up in business.—*Topeka Blade*.

BLINDER than the blindest bat that fluttered in dark Egypt's deepest darkness are those who put not their trust in God or man, but in tricks. Little traps, set by little men, are daily knocked to pieces beneath the very noses of their sagacious contrivers, and the world's derisive laughter rings out at "Strategy, my boy!"—*Prentis*, in "A Kansan Abroad."

WHILE Americans are, as yet, only experimenting with the telephone, the more practical Germans have already applied it to use. In and around Berlin, it has almost entirely superseded the telegraph. Prince Bismarck has established a line from his county seat to Berlin, a distance of 230 miles, and it works with perfect success.

THE United States exported in 1790, 144,734 pounds of cheese; in 1800, 913,843; in 1830, 688,241; in 1840, 723,217; in 1850, 13,020,817; in 1860, 15,515,799; in 1870, 56,296,327; in 1876, 97,676,264; while in 1877 the total up to a date in December was 107,364,666 pounds.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 9, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE last number of the *Western Review of Science and Industry*, Theodore S. Case, editor, Kansas City, is out. Mr. Case is bound to make a success of it, and persons interested in scientific subjects would do well to send for a sample copy.

NOBLE L. PRENTIS and his "Impressions" are booked for Ottawa on the evening of the 12th, and at Garnett on the 19th. The young man will appear at "early candle-light," and in about five minutes thereafter the intellectual fire-works will be shooting around like rockets on a Fourth of July night.

WE are much obliged for copies of the Parsons *Broadaxe*, which certainly is or rather was a gem. Prof. Chidester is a genius with an electric pen. He says: "We are appreciative, but until we have more time than at present to attend to it the *Broadaxe* must bid you all adieu." Success to it when it starts again, as it will some day, we hope.

WE have received the first number of the Highland *Sentinel*, G. F. Hammar, editor and proprietor, a six-column paper well gotten up. If Mr. Hammar had named his journal *The Anvil*, it would have been more in the "industrial" line; and from the proceedings of Congress, we are inclined to the opinion that the war is over. Success to it, all the same.

THE Appropriation Committee of the House has under consideration a bill providing means for continued investigation of the locust problem by the United States Entomological Commission, of which Prof. Riley is Chief. That is a question in which Kansas is deeply interested, and we trust that Congress will grant the \$25,000 asked without hesitation.

LESLIE J. PERRY, of the *Paola Spirit*, has opened an establishment in West Kansas City for the publication of "auxiliary sheets," sometimes irreverently called "patents." The *Spirit* has always been clean, bright and stylish, and may be taken as a reliable prospectus of the work Perry will turn out. As an old Kansan, Perry has determined that Kansas shall have a patent of its own.

Publishing and Something Else.

The average American citizen is apt to underestimate the cost of publishing a newspaper. He receives each week matter that would fill a small volume, presenting a wonderful variety of news, fact, fancy and fun—all for the royal sum of from two to four cents per number. And quite naturally he drops into the opinion that, since publishers continue to issue papers at such rates, there really can be no very great expense in getting one up.

The publisher knows better. He always knew better, even before he became a publisher; and he keeps knowing better every time there is a bill to pay or a beefsteak to buy. But that knowledge, despite all he may say to the contrary or print by the column, is practically confined to the sacred precincts of his own sorrowful bosom. The average citizen, with a glittering eye and a majestic sagacity, puts all little statements of that kind into his chaff pile. He isn't to be fooled that way—oh no!

As a result of this general feeling on the one side, and on the other of a greater com-

petition than exists in any other business, the average publisher is forced to do one of three things—quit the business, merely earn salt, or combine some other business with that of issuing a newspaper. It would be easy to cite examples of good printers and good editors who find it necessary to "suspend" good papers just because they can't help it. It would be easier to find men of skill, experience and brain who are hardly earning bread, and yet struggling against hope to put their papers on a paying foundation. There are not so many of the third class, and we wish to call attention to this alternative.

It is doubtful whether ten per cent of the publishers of Kansas are making a fair success, when the amount of capital and labor employed are considered; and in these cases, it is doubtful whether the same man, after spending the same best part of his life with the same intensity in some other vocation, wouldn't have made a better success. Usually, too, it will be found that these parties have really made their profit not by journalism but by job printing, office, or other outside methods.

Apart from job printing, which grows naturally out of publication, there are other employments which might easily be combined with the issuance of a paper—in fact, anything which depends for its success more largely upon advertising than upon the amount of capital required; for example, a bookstore and circulating library, land agency, real estate business, and vocations of that class. A good county office isn't bad, a post-office is better, and a land office is bliss! We commend the third alternative to the attention of the craft. If, in your old age, you want a little slice of pork with your beans, the chances are that you must combine some other business with that of publishing a newspaper.

Hints on Decoration. No. 3.

Some people have the notion that high colors are out of taste. Nothing can be more absurd. But we must know where and how to use them, and this knowledge can only be acquired by a proper education and much hard work. The uneducated drift under the influence of the prevailing fashion. If A paints his house in a mourning shade of dark brown, contrasting with green shutters and yellow doors, neighbor B, who distrusts his own taste altogether, soon imitates him, and neighbor C will perhaps follow. Thus nonsense and bad taste finally become fashion. The more sensible perhaps feel that the combination is unnatural and inappropriate, but to avoid it they simply take to monotony in painting their houses white or gray, with no variation whatever.

McGrath very happily divides people in regard to the above notion into three different classes,—into savages, semi-civilized and artistic. The savage, he says, are those who daub on, or love high color in gaudy patches, thinking only of bright effects. The semi-civilized detect the grotesque combinations of the poor savage, but not seeing how to do much better, vote all high colors "vulgar," and suppose "drabs," "browns," and "quiet" shades only to be in good taste. The artistic, seeing that the "quiet" tints are good, also see that bright colors are beautiful as well; and, having mastered them and knowing the appropriate place of each, feel that they can use them at all times and in all places, so arranged as to convey the impression they desire.

A walk through any of our towns will prove that the great majority of us must be enrolled in the first or second of these classes. Good taste in color is among us

an exception, so to say. Herein we are behind many of the half-barbarous nations of Asia. It is said that the most startling novelty of our Centennial Exposition consisted in the decorative art exhibited by Japan and China. Their decoration shows a pleasing warmth, in all cases; and, if they use gray or other cold tones as a background, it is done to give more emphasis to the positive tones, which are always wonderfully fresh and beautiful. Their daring application of metal hues on color is something altogether unknown in the western countries, and is charming beyond expression. The woven fabrics of Hindostan and Persia are also marvels of beauty in original and tasteful coloring still more than in mechanical execution. Yet while so much of admiration is due to their art of coloring, these nations need instruction in the science of design. The most exquisite decorations are often found upon vases of unsymmetrical or unproportioned shape. With no people would the study of the science of design, geometry and perspective accomplish finer results than with these named eastern nations.

The theory of color is a subject which requires far more serious attention than has been given by any of the numerous "systems of education" now in operation in this country and in Europe. I have often wondered why educators never attempt in their works on primary education to teach the leading principles of coloring. It seems to me a matter of importance. Color occupies, in the art of decoration, the next place after form, and it is a property of matter as universal as gravitation. In many of the higher schools and academies, too, an attempt to teach the use of color is based upon entirely false and injurious principles.

The most exhaustive and scientific analyses of light and its phenomena are of little value for the creation of taste. What should be taught for this purpose are the effects of contrast and relations of colors, the difference between the effects of colors and pigments, also of colors and metals,—all of these principles illustrated and demonstrated by numerous examples familiar to the student.—J. D. Walters.

An Offer.

By the educational system of the United States, the work of giving instruction in those branches which men most use in daily life is clearly and wisely assigned to the public schools. Every American, no matter what his vocation, daily speaks, reads or writes the English language; hence, the first object of the public school is to give the pupil such instruction and drill as shall enable him to use the language expertly and correctly.

All persons make a daily use of the ideas of number or size. These ideas are better expressed by figures than by words. Both time and labor are saved by writing "1878" rather than "eighteen hundred and seventy-eight." It is doubtful whether any one can, by the exclusive use of words, multiply seventy-nine and three-quarters by ninety-seven and seven-nineteenths, though the operation can be readily performed with figures; hence, the schools instruct and drill the pupil in the properties and uses of figures.

All persons make a daily use of the ideas of form, which ideas can neither be expressed by words nor figures, but only by lines. The instrument employed may be the pen in writing, the pencil in drawing, the hand in shaping a loaf of bread, the scissors in cutting a dress, the saddler's knife, carpenter's plane, smith's hammer, the mason's chisel, the gardener's spade, plow, type

or brush. And the variety and number of the instruments employed by the working masses for the purpose of expressing ideas of form, should of itself indicate the practical need for greater attention to this matter in the public schools.

These are the three natural languages which all persons constantly use, either in conveying ideas to others or in receiving ideas from others; nor is it possible to hold communication with mortals except by sounds, signs or forms. So that, whatever additional kinds of knowledge may with advantage be included in the domain of the public schools, there can be no question, either on the ground of advantage or necessity, that the first and essential duty of these schools is to give such instruction and require such drill as shall make the pupil accurate, quick and skillful in these languages, as they are profitably employed in daily life. And, as respects either of these languages considered by itself, it makes no difference where the boundary be placed dividing the domain of the district from that of the high school, whether between English and the philosophy of language called grammar, or between arithmetic and algebra, or between drawing a map and drawing the working plans of a building,—be all this as it may, no shifting of that boundary can free the public schools from the imperative obligation to make the pupil expert in the fundamental principles and operations of the natural languages. Upon that proposition, parents, teachers, tax-payers and law-makers are all and heartily agreed.

The question arises whether our Kansas schools are really doing this work as efficiently or generally as they might. Some parties claim that they are; others that they are not. Of some schools the claim is probably correct; of others it certainly is incorrect. And it would be easy to show that there are natural and powerful forces constantly battling against the efforts of the best teachers in this direction. To say nothing of the natural preference which all teachers have for "advanced" over "primary" classes, the low salaries which occasion shifting of teachers, the irregularity of attendance by pupils, the feeling upon the part of parents that because a boy knows how to do a thing he therefore always does it perfectly,—these and other causes would lead to the opinion that defects might fairly be anticipated. But does the mere stating of a cause remedy a defect? And, after all, how great and real is that defect? What are the facts in the case?

We are not among those who lay all the imperfections of pupils at the door of the teacher. As a class teachers are far more earnest, faithful and efficient than their wages justify. Often only ranking in pay with the day laborer, they stand far higher in brain, heart and character. As a rule they, more than all other persons, are most anxious not only to discover but to remedy all defects.

For the purpose of calling the attention of Kansas teachers to this subject, and in the hope that some may be induced to determine for themselves just how much or how little skill their best pupils have in performing the simpler operations of the three natural languages, we make the following offers:

One number of the *INDUSTRIALIST* free for two months to that one of your pupils who, upon fair competition with the others, shall prove to be the best speller of everyday English words,—geographical and scientific technicalities being barred.

Another number free for two months to the most accurate user of figures in addition, multiplication, subtraction and division,—arithmetical and algebraic puzzles being barred.

Another number, ditto, to the one writing the most legible and neatest hand, legibility to have the preference.

Another number, ditto, to the one who makes the best floor-plans and cross-section of your school-house, drawn upon a scale of one-eighth of an inch to the foot.

Another, ditto, to the one who writes the best "local" for the nearest newspaper, the editor to name the subject and to be the judge, and the "local" to be over one and less than two "sticks" in length.

In each case except the last, the teacher is to conduct the examination and make the decision according to his or her best judgment.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 9, 1878.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

The Executive Committee had a full meeting last Tuesday, Judge Kingsbury being present. The usual business was transacted.

From February first to the fifteenth is the best time to plant early subscriptions for the INDUSTRIALIST, seventy-five cents a year.

The stone sidewalk to town has been most gloriously appreciated this winter, and we feel like returning thanks over again to Manhattan for building it.

Somebody has gobbled our copies of the Manhattan papers this week, so that we cannot present the usual clippings from the *Nationalist* and *Enterprise*.

Winter nearly over; almost spring again,—peach blossoms, lettuce, asparagus and things! Who cares for a slight dab of mud here and there, or for an occasional snow-storm only a week or so long?

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

The new College Building will be stone, two stories and a mansard roof, and larger than the new school-house down town,—which latter, by the way, is one of the finest and cheapest \$12,000 buildings in the State.

The plans for the agricultural wing of the new College Building were received last Tuesday, and several bidders are "figuring." Owing to a change in the meeting of the Board, the date of opening bids has been changed from February 12th to March 5th.

We extract the following from a private letter from a friend in Wamego:

"We have two hundred and forty pupils in attendance, and have four teachers. One feature of our literary exercises Friday afternoon is the reading of the Wamego *School Journal*, edited and published by two pupils elected by ballot each week. Under the head of "Educational News" in last issue was a paragraph as follows: 'Tuition at Agricultural College, John A. Anderson, President, is absolutely free. Agriculture, horticulture and stock growing being the leading productive occupations in Kansas, Pottawatomie county should send a large delegation of her boys and girls to the People's College.' I hope that the time is not far distant when the Agricultural College will have one or more students from every school district in the State."

At the last meeting of the Alpha Betas, Mr. Charles Strong was recommended for membership. The question, "Resolved, That the United States should adopt the free trade system," was decided negatively. The points upon either side were good and were ably defended, but the right always wins. The *Gleaner* was presented by Miss Bouton and A. E. Wilson, and received much praise from the members. Editors for the next number, G. L. Platt and Hattie Allen. Question for debate: "Resolved, That Major Andre should not have been executed." Affirmative, A. H. Stiles and G. L. Platt; negative, T. J. Wyland and A. E. Wilson. Declaration, Miss Clarke; essay, W. E. Younger; reading, Ezra S. Clarke.

The Society has not been in so flourishing a condition for many months as at the present time. There were sixty persons present at the last session. Old members who are reading the INDUSTRIALIST and watching the Society reports need have no fear of the "A. B.'s." They are firm as the everlasting rocks. The Society returns thanks to W. H. Sikes for adding to its library some of Walter Scott's works.

A moot-court took the place of the regular order of business of the Webster Society last Saturday evening. The room was well filled. Among the visitors were several ladies. After considerable delay in opening the court, a jury of six was impaneled, and the case opened with the examination of Mark A. Reeves, plaintiff. He was followed by two other witnesses for the plaintiff. All of these agreed substantially to the same story which was this: On the mornings of the 12th and 15th of January, 1878, the cattle of A. Beacham broke into and destroyed a considerable quantity of Reeves' shocked corn. Reeves claimed sixty dollars as damages, and Beacham refused to pay more than thirty; so, like very foolish men, they went to law about it.

Augustine Beacham, defendant, was next called and told a pretty straight story. He claimed that,

though the stock had done some damage, it was slight. Mr. Wylie, though evidently believing Beacham to be in the right, appeared to your reporter to be somewhat confused by the questions of the attorney, so that his testimony did not carry the weight that it should have done. A. N. Godfrey then testified for the defendant. His testimony agreed in the main with that of his fellow-witnesses, contradicting the testimony of the opposite side.

Attorney for plaintiff, Mr. Scott, summed up his evidence, and made a short plea. He was followed by Mr. Salter, attorney for the defendant. Mr. Scott closed the case with a plea in which he went sailing off into U. S. bonds and the silver question, and finally was called down by the opposite attorney growling out that he wanted a summing up of the evidence and not so much "highfalutin."

The jury was charged and retired, and in a few minutes returned with a verdict for the plaintiff. Damages \$45 and cost of suit. **REPORTER.**

The Manhattan INDUSTRIALIST proposes to furnish every teacher in the State with a copy of that paper three months, if they will only send their names and post-office address. We advise every teacher in this county to accept the offer, as the paper is a good one.—*Beloit Record*.

Remember, teachers, to keep posted in your work by taking some good educational paper or journal. Patronize your home educational papers, too, by sending for the *Calendar* or INDUSTRIALIST, or both,—for they are both worthy the patronage of every teacher.—*Arkansas Valley Democrat*.

One of the most interesting articles ever written on wheat culture, in Kansas, has just been published in the *Industrialist*, the Agricultural College paper. The article was written by T. C. Henry, the great wheat grower of Abilene, and is one that should be read by every farmer in the State.—*Beloit Record*.

The Manhattan INDUSTRIALIST, the organ of the Agricultural College, very kindly speaks words of cheer to our enterprise—for which, thanks. That institution is becoming the boast of all loyal Kansas, and right nobly has she won her laurels. "May she flourish as a green bay tree,"—is our wish.—*Columbus School Journal*.

LITTLE, BUT ----!

The brightest little weekly that comes to our table is the Manhattan INDUSTRIALIST, published at the Agricultural College, and edited by the President of that institution, Hon. John A. Anderson. It is alive all over,—which is only another way of saying that it is Anderson all over.—*Leavenworth Times*.

Beware of societies for the diffusion of useless knowledge; assemblies of people who know nothing, to discuss matters of which nobody knows anything. Remember that the Almighty is the only being who is omniscient, the claims of various learned societies to the contrary notwithstanding. There are some things you will never know, and it is a good plan not to rack your brains over those things.—*Prentis*, in "A Kansan Abroad."

What does it profit a man to handle over a large number of skulls, and shout with rapture when he finds a monkey's skull which resembles his own? He cannot know, after all, that that particular monkey was his relative. The glow of family pride which comes over him at first is soon dampened by the dreary reflection that there may be a mistake somewhere; that the depression in the monkey's forehead which gives it its startling resemblance to his own may be exceptional, may have been the result of accident in youth, a blow from a cocoanut in the hands of an irate parent, or something of that kind.

"The paths of glory lead but to the grave," and the paths of this sort of "scientific investigation" lead us into the mazes of painful uncertainty. Our ancestral gorilla eludes our grasp like the air-drawn dagger of Macbeth. And if he did not, what then? Is there any present or practical good to be attained by dwelling on his merits or demerits, or in tracing painfully the line which leads from us to him, realizing, perhaps, that of late years the family has degenerated?—*Prentis*, in "A Kansan Abroad."

EDUCATIONAL CALENDAR ITEMS.

The Topeka school board has purchased a set of metric instruments.

The public schools of Kansas will be almost self-supporting within the next decade.

The schools at Kinsley are in good condition according to the *Valley Republican*.

Neodesha has a handsome school building. The *Frederonia Citizen* prints a picture of it. Cost, \$15,000.

The Kansas Publishing House is already engaged on the third edition of Felter's Elements of Book-Keeping.

The industrial department of the Blind Asylum at Wyandotte is making seventy dozen brooms per month.

The folks at Victoria are getting ready to open a school, and have begun the erection of a \$1,500 school-house.

The girls in the hat class at the Blind Asylum are manufacturing the finest palm-leaf hats ever offered in the western market.

The *Courant-Ledger* thinks parental government in Kansas extremely lax, and suggests an anti-hooligan movement to teach young ones manners.

A gentleman from one of the "rural districts" wrote the State Superintendent recently, asking if the "unwholesome practis of dansen in the skule house kant be stopped?"

Hutchinson has a school-room with walls and ceiling frescoed, floor carpeted, and walls adorned with magnificent paintings. The *Interior* says that to teacher and pupils it is a "thing of beauty and a joy forever."

J. Bascom, of Lyon county: "We are charmed with the Book-Keeping. Never had such enthu-

siastic work in any school in my life." Such is the testimony from over a hundred teachers during the last two months.

Miss Sue R. Lovel, Principal of Silver Lake public school, has a fine class in book-keeping, which study alternates with arithmetic. She reports the plan a decided success, and that it more than pleases the parents and pupils.

There was a decrease of 46 in the number of male teachers employed in the public schools of Kansas last year, and an increase of 239 female teachers. The average monthly wages paid male teachers was \$33.66; female teachers, \$27.03.

Superintendent Story, of Cowley county, publishes in tabular form the reports of all the schools in his charge. The various statistics for each, side by side, are interesting and instructive; and he lectures teachers whose schools do not appear in the list.

Prof. Wheeler, Principal of the Ottawa public schools, has successfully introduced book-keeping into his school, and his testimony is that arithmetic and grammar do not suffer, but that a marked increased interest is noticed in these grades. A pill for fossils to swallow.

Prof. Riley, of Chanute, writes: "The Chanute schools have introduced Felter's Book-Keeping. The pupils are delighted with it, and the girls excel in the work. . . . The CALENDAR is a welcome visitor, because it contains so much educational news, to say nothing of the practical hints in school work."

A number of the county superintendents have expressed the determination to recommend no teacher to a position in the country who makes no effort to obtain a knowledge of the elements of book-keeping. Particular facilities to this end will be given at the next county normal institutes. Teachers should take the hint.

Our friend, H. Quicke, Principal of the schools at Girard, in his report for the term ending December 21st, made this observation: "To create and maintain a proper enthusiasm for school pursuits—to make thinkers and reasoners, as well as to give practical direction to the principles taught—should be the object of every true teacher."

Kansas became a State on the 29th of January, 1861. On her seventeenth birthday she had 700,000 people; \$229,134,000 in property; \$66,000,000 in farm products last year; 2,811 miles of railroad; 233,000 school children, and 4,008 school-houses; an interest-bearing common school fund of \$1,237,331; a land-endowment fund of nearly 3,000,000 acres; a college, seminary or high school in nearly every county seat.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be

procured in Manhattan, cost from \$2 to \$5 per term. No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending February 7th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar. Height	Inches of Rainfall.
	Max.	Min.	Mean.		
Friday.....	35°	16°	33°	28.84	
Saturday.....	234	6	30°	29.05	
Sunday.....	337	10	24°	28.99	
Monday.....	449	19	38°	28.65	
Tuesday.....	558	34	48°	28.32	
Wednesday.....	657	40	49°		

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 9, 1878.

The Press on the Agricultural College.

A superior institution of learning.—*Minneapolis Sentinel*.

One of the best of that kind in the State.—*Jewell County Monitor*.

One of the best institutions in the West.—*Lincoln Center Register*.

Is winning a deservedly high reputation. Success to it.—*Leavenworth Press*.

An institution that every Kansas farmer should feel proud of.—*Farmers' Advocate*.

Is the place for obtaining a thorough and practical education.—*Winfield Courier*.

Gives a practical as distinguished from a professional education.—*Yates Center News*.

It has become a valuable educational adjunct to the school system of our State.—*Iola Register*.

One of the reliable institutions of this State, and worthy your patronage.—*Hutchinson News*.

Under the superintendence of able instructors, and offering great advantages.—*Osage City Press*.

Combines the practical with the theoretical in a most satisfactory manner.—*Garnett Plaindealer*.

One of the best conducted schools in the country. Its students all speak well of it.—*Emporia Ledger*.

Those desiring a practical education cannot do better than to attend the "Agricultural."—*Alma News*.

We ought to have a large delegation of boys from Miami county at this College.—*Paola Republican*.

Kansas may well feel proud of her institutions—especially her State Agricultural College.—*Galena Miner*.

Under its present management it is doing that which will ensure us successful farmers.—*Beloit Gazette*.

Every friend of education will wish the institution continued and increased success.—*Concordia Empire*.

They turn out good printers as well as good farmers at the Agricultural College.—*Concordia Expositor*.

The President and the Faculty are doing all they can to advance the interests of the institution.—*Parsons Sun*.

An honor to the State, and will be the means of unlimited good to the rising generation.—*Ellis County Ledger*.

All those who wish to obtain a practical education can get it there at very moderate expense.—*Wyandotte Gazette*.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courier*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction News*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST's" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

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THE NEW YORK TRIBUNE

FOR 1878.

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The Agricultural Department of THE WEEKLY TRIBUNE has always been recognized as beyond

comparison with that of any rival. More good work and more money are now spent upon it than ever before. Among regular contributors to it are Professor JAMES LAW, the country's foremost veterinary authority; Professor L. B. ARNOLD, unequalled as an instructor in the fine art of dairying; Professor G. C. CALDWELL, of national reputation as an agricultural chemist; Professor C. V. RILEY, the well-known entomologist; Mr. JOSIAH HOOPES, the horticultural authority, and other agricultural specialists of the highest rank.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, FEBRUARY 16, 1878.

No. 44.

THE INDUSTRIALIST.

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OF THE
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Address A. A. STEWART, Manhattan, Kans.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13	1.13
Teachers.....	1.13	1.13
Professional education:		
Ministers.....	0.43	
Lawyers.....	0.55	
Doctors.....	0.73	1.71
Industrial education:		
In agriculture.....	59.13	
In manufacturing and mechanical	14.63	
In personal service.....	13.89	
In trade and transportation.....	9.51	97.16
	100.00	

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Educational Changes.

It is plain that there is a growing disposition in the country to abridge the present curriculum of our public school system, and bring it within the limits originally designed, and which were maintained for several years after it was established. This disposition is shown in the current discussions on the subject, and in the preliminary actions taken by some of the State Legislatures. Soon after the meeting of the present General Assembly of Ohio, a bill was introduced to remove from the high schools of Ohio the study of the Latin and Greek languages, the higher branches of science, and some other topics, so as to reduce the entire public school system to the ordinary branches of a good common-school English education. So far as we have observed, no action has yet been taken, nor can we predict the result of such a measure. That it will meet with strong opposition there is no doubt, and it may be defeated; but that some such change as this bill contemplates will ultimately be made, and that, too, in the not distant future, we feel quite sure. We have several times considered this subject at some length in these columns, but now mention this recent step merely to call attention to what is passing.

The Legislature of New York, now in session, has the same subject before it, although it takes a special direction. A bill has been introduced "for discontinuing the taxation of the city for the support of the College of the City of New York (formerly the Free Academy), on the ground that municipal responsibility for free education ends with the supporting of public schools." Of course this meets with strong opposition from the alumni of the old "Free Academy," and hence we are not surprised to see it stated that "the alumni and other friends of the College are making a strong resistance to the bill, and it is reported that more than 97,000 responsible names are already signed to a petition of citizens adverse to the action proposed." The alumni feel a natural and becoming pride in their *alma mater*, and do not wish to see its glory wane but why should every tax-payer of the city of New York be burdened with sustaining a college to teach all the students which usually enter into a college course, when, in the nature of things, but a mere handful out of the whole population of the city can possibly avail themselves of its advantages? And, for the same reason, why should any State, or any city, be taxed for maintaining the higher branches of learning, upon the plea that it is the duty of the State, for its own welfare and safety, to provide education for the whole body of children within its borders, when but a mere fraction of these same children are able to receive the benefit? —*Cincinnati Herald.*

BUT some people say the office of colleges and universities is not to prepare young men and women for the rugged vocations of life, but to impart to them mental culture. Culture is good; but the question arises, What is the best culture? A man might take a quarter-section of raw prairie, break it, harrow it, and finally seed it down to marigolds; and that would be culture. The result would be beautiful. A thing of beauty and a joy, till frost comes, would be that field of marigolds. What eye would not kindle when "jocund day stood tiptoe on the misty mountain-tops," pointing with rosy fingers to those one hundred and sixty acres of glowing, golden marigolds? But the man owning the adjoining quarter breaks up the prairie sod and puts the entire tract in onions—and that would be culture, too. The onion is not an aristocratic vegetable; it is not admitted into good society. When the opera house is a blaze of light; when the wealth of empires glitters in diamonds on necks of snow; when the echoes of delicious music fill the high hall, and the vast drop curtain as it falls trembles responsive to the applause that swells from parquet, boxes and galleries, no admirer ever throws at the feet of the child of genius, the embodiment of beauty and melody, a

dewy bouquet of fresh-culled onions. And yet, to return to the kind of culture in the prairie, public sentiment, leaning over the rail fence and commenting on the two quarter-sections, goes with the raiser of onions; applauds the thoroughness of his culture; remarks the admirable condition of the soil and the absence of weeds; and the man of onions goes down to his house justified rather than the other. I confess that I am a partisan as between marigolds and onions. I am an ultra onion man, myself.—*Prentis, in "A Kansan Abroad."*

MR. R. C. STOREY, Superintendent of Public Instruction of Cowley county, makes a little speech in print, which can neither be abridged nor enlarged. Every school officer will please strike out the word "Cowley," insert the name of his own county, and then read:

"To the School Board of Cowley County:—The law makes it one of your duties to visit your respective schools; your interests as tax-payers ask you to do the same; your relations as patrons of your respective schools demand this work of you. As school officers, as citizens, as parents, do you feel the obligations resting on you in this matter? You can stimulate the scholars in their labors by calling on them while in school; you can see the methods of your teachers; you can judge of their merits and their defects in no other way so well as by visiting; and you can give the teachers the full benefit of your moral, personal and official help in the discharge of their important duties. If your teacher needs your help in bringing unruly and lawless pupils into subjection, you should be willing and prompt to meet the demand. You should impress the pupils who may be inclined to insubordination with the fact that you are in full accord with the teacher, and that you will allow no disobedience, no rudeness, no disorder to go unpunished. The moral obligation of your position demands this of you, and your interests as parents should compel you to assume and maintain such a stand."

Forest Planting.

Forest planting has become a necessity in some countries in consequence of the scarcity of timber, the reduction of the volume of water in rivers, the drying up of springs, the inundations caused by the unchecked flow of pluvial torrents from the mountain slopes, and the deleterious changes in climates from the cutting down of woods. Cities whose streets are planted with trees are much healthier than those without them, and there is even a difference in the salubrity of the atmosphere in sections of the same city from a similar cause. In France, Italy, Greece, Germany, Austria, England, and the colonies in Australia and New Zealand, the government has undertaken a systematic replanting of the forests.—*Atchison Champion.*

AN ostrich and a hen chanced to occupy adjacent apartments, and the former complained loudly that her rest was disturbed by the cackling of her humble neighbor. "Why is it," she finally asked the hen, "that you make such an intolerable noise?" The hen replied, "Because I have laid an egg." "Oh, no," said the ostrich, with a superior smile, "it is because you are a hen and don't know any better."

Moral.—The moral of the foregoing is not very clear, but it contains some reference to the agitation for Female Suffrage.—*New York World.*

THE Burlington, Kansas, *Patriot* states that red ochre of the finest quality has been discovered in inexhaustible beds, four miles from that place. The *Patriot* says a piece of it is on exhibition in that office, which is as good a specimen of red chalk as was ever handled. Judge Kingsbury forwarded a sample to Prof. W. K. Kedzie, at Manhattan, who after a careful analysis, pronounces it first-class red ochre, which is one of our most staple paints, entering largely into home and foreign consumption.—*Topeka Blade.*

THE following, according to an exchange, is the result of the measurement of over a half a million of men as regards height and nativity: The mean height of the American Indian is 67-934; the American white man, 67-672; Scotch, 67-066; English, 66-575; Russian, 66-393; French, 66-277; Mexican, 66-110.—*The London Doctor.*

KANSAS is first in the field in asking Secretary Sherman for \$200,000 of the new four per cent popular loan bonds. These bonds are wanted for her school fund and her sinking fund. Of course she will get them, with a large amount of free advertising for her promptness, her public spirit, and the wise management of her public funds. The investment is a good one, no matter what way you look at it. The commissioners of the Permanent School and University Funds met Monday, January 28th, and passed the following resolution:

"Resolved, That Hon. John Francis, Treasurer of the State of Kansas, be and he is hereby directed to invest one hundred and forty thousand dollars (\$140,000) of the permanent school fund of the State of Kansas in United States bonds, in that class designated as 'United States funded loan coupon bonds'; he and is hereby authorized to purchase the coin necessary therefor as required by the United States Treasury Department."

On Tuesday, the 29th ult., Treasurer Francis started East to make the investment.—*Educational Calendar.*

In visiting quite a number of our schools, I notice some things that ought not to be. Too much cramming is done. Things are taught that children have no business with. Teachers do not let the pupils do work, but do it for them. They do not teach the pupil to think, examine and compare. Some of our schools have no system, everything seems to be done in haphazard mode. Some schools are not graded, and records of recitations are not kept according to law.

We attended a public meeting one evening not long since, where it was resolved to buy a blank book in which the minutes of the meeting should be kept; whereupon a prominent business man rose and said, "We can get such a book at the Kansas Publishing House cheaper than anywhere else in the world."—*Philo, Osawee, Kan., in Educational Calendar.*

NEWSPAPER men, who really may be supposed to need phonography, as I have said, get along without it. They find it easier, in many instances, to sit comfortable while the entirely original, unpremeditated and impromptu discourse is being delivered, and then, approaching the speaker after he has concluded his remarks, hear him say, "Why, my dear sir, I was not expecting to have my hasty remarks appear in print, but if it would be an accommodation to you, I can let you have the heads of my address—just a synopsis, you know." Whereupon he proceeds to draw from his right-hand coat-tail pocket the complete manuscript.—*Prentis, in "A Kansan Abroad."*

NUMEROUS facts are cited by the Australian explorer, Landsborough, which go to prove that dense forests are on the increase in Australia, that the climate is growing moister, and that even the great central desert may, in course of time, become inhabitable. The frequency of fires, prior to the introduction of sheep farming, when there was nothing to keep down the grass, was terribly destructive to trees, and to all vegetation. Now these ravages are becoming limited in extent.

A VENETIAN merchant who was lolling in the lap of luxury was accosted upon the Rialto by a friend who had not seen him for many months. "How is this?" cried the latter; "when I last saw you your Gaberdine was out at elbows, and now you sail in your own gondola." "True," replied the merchant, "but since then I have met with serious losses, and been obliged to compound with my creditors for ten cents on the dollar."

Moral.—Composition is the life of trade.—*New York World.*

THE Cambrian News, a Welsh paper, says that "at the Merionethshire Quarter Sessions the Rector of Llanfairpwllgwyngyllgogerytsiliogogogoch was charged by the Dolgellau Local Board with obstructing the highway near the town." But, judging from its name, one would suppose it to be the town that was obstructing the highway.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 16, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

An Offer.

For the purpose of inducing Kansas teachers to determine for themselves the ability or inability of pupils to perform the elementary operations of the branches taught in the public schools, we make any one or all of the following offers:

One number of the INDUSTRIALIST free for two months to that one of your pupils who, upon fair competition with the others, shall prove to be the best speller of everyday English words,—geographical and scientific technicalities being barred.

Another number, free for two months to the most accurate user of figures in addition, multiplication, subtraction and division,—arithmetical and algebraic puzzles being barred.

Another number, ditto, to the one writing the most legible and neatest hand, legibility to have the preference.

Another number, ditto, to the one who makes the best floor-plans and cross-section of your school-house, drawn upon a scale of one-eighth of an inch to the foot.

Another, ditto, to the one who writes the best "local" for the nearest newspaper, the editor to name the subject and to be the judge, and the "local" to be over one and less than two "sticks" in length.

In each case except the last, the teacher is to conduct the examination and make the decision according to his or her best judgment.

WE sometimes desire to send the INDUSTRIALIST for a month or so to those who are not subscribers, our object being to set forth the work of the Agricultural College. These subscriptions are regularly ordered and paid to the Printing Department by the Executive Department. Parties so receiving it need have no apprehension that their acceptance will be construed into a subscription, or any charge made against them. Those desiring to subscribe can easily notify us.

THE Hon. Dudley C. Haskell will please accept a whole cargo of strong thanks for a copy of the House Blue-Book, containing the Constitution of the United States; Jefferson's Manual of Parliamentary Practice; the standing rules, joint rules, and orders for conducting business in the House of Representatives; and Barclay's Digest. The volume isn't as large as a patent-office report, but it will be far more diligently perused by the members of the College Drill Club; and its receipt is as highly appreciated as it is timely.

THE article on "Educational Changes," appearing on the first page, is from the pen of Dr. R. L. Stanton, for many years President of Miami University, Ohio, and one of the brainiest educators of the West. For sometime Dr. Stanton was editor of the New York *Independent*, and is now on the *Herald and Presbyter*, one of the most influential of the western religious journals. Coming from such a source, the article has peculiar significance, apart from its substance, and shows that the change of view upon educational matters is more general than some persons may fancy.

Speaker Samuel N. Wood on Kansas Education.

The following letter speaks for itself, being written by a gentleman who, both by nature and practice, is quite competent to speak for himself. The INDUSTRIALIST is

the only paper in Kansas which regularly visits every member of the House and Senate; hence, it affords a very convenient method for the interchange of views by those gentlemen. Its columns are always open to them for this purpose, provided the subject discussed lies fairly in the proper field pre-empted by the INDUSTRIALIST. Of course political issues and drives will be excluded:

LAKE CITY, Colorado, Feb. 3d, 1878.

Editor Industrialist:—Your issue of Jan. 20th came smiling into my temporary abode here to-day. It was unusually full of good things. The article from the *St. Joe Herald*, containing an extract from Gov. Hartranft's message to the Pennsylvania Legislature, and the extract of Gov. Robinson's message to the New York Legislature, are excellent. They ought to be copied into every paper in Kansas.

The theory of taxation for public schools is, that we bring the schools home to every pupil and the whole community is benefited.

It was a terrible fight we had with the Normals, and it startled the educators of the State. Yet we were right. I incline to think that not only the Normal Schools and Agricultural College, but the University must be made self-supporting, or quit. There is no argument, justice nor right in taxing the masses—the entire community—to educate a few; to educate teachers, lawyers, preachers or doctors. When I asserted, in the State Teachers' Convention at Topeka, a little over a year ago, that it was a question whether we could give a boy a "liberal education"—that is, in the sciences and languages—and keep him on the farm, I was almost hissed; yet facts are sustaining the query everywhere. The fact is, the public is only bound to give each child the benefit of a common-school education, and our higher institutions of learning must be supported by those who receive their benefits.

And we need a great change in our common-school system. We are wasting thousands of money that does but little if any good. I know of school districts in Kansas where they pay \$30 to \$40 a month for a teacher, and where the average daily attendance is not over three or four scholars. This waste should be stopped, and we should insist on value for our money.

But I only took up my pen to thank you for your visit.

Yours, truly,
S. N. WOOD.

Stealing Messages by Telephone.

A late issue of the *Lawrence Tribune* contains the following:

MR. EDITOR:—A good illustration of the "stealing of news from other lines" by the telephone, or the "inductions of currents" spoken of by Prof. Kedzie, occurred at the office of Messrs. Ridenour & Baker during the time they had instruments connected with the L. L. & G. line, which we were by the kindness of Mr. Hidden permitted to use.

The line that these instruments were attached to runs for about one-half mile on poles where there are three other lines. While conversing with a party at the packing house, our attention was called to the sound of a common telegraph sounder through the receiving telephone, as clear and distinct as an operator hears it at his desk. We heard the call "A," the operator sign "I, I," and "A's" answer and the address of the message very distinctly; then came the message, which we failed to get, as we had forgotten Prof. Kedzie's advice to read one stroke behind.

From the office calls and address and signature of the message, it is more than probable that this message was sent from and to an office in Kansas City. Will some one tell us which instrument, the receiving or sending, was heard—if either; or was it one nearer by, of which there were several? Also do what Prof. K. failed to do—

explain why one stroke behind is necessary when reading from inducted currents?

PHONE.

In answer to the first question above as to which telegraphic instrument is heard, the sending or receiving, the reply would be, neither. There is no condition in the above occurrence which would make possible the hearing of the tick of any instrument on the inducing line. What is heard is the clicking of the telephone diaphragm, produced by its sudden motion backward and forward under influence of the induced currents passing its circuit. The same effect would be produced without any telegraph instrument on the inducing line, provided that line were cut and the message sent by rapidly touching and separating the cut ends, a frequent feat of telegraphers; or, better still, by plunging one end of the cut wire in a mercury cup and sending the message by rapidly touching the surface of the mercury with the other end of the wire—a perfectly noiseless process.

As to the second question: It is necessary to read one "stroke behind" in attempting to read a message stolen by induction from an adjoining line, because there are two induced currents, one flowing instantly when the current of the inducing line is broken by opening the telegraph key, the other the instant it is closed again. Thus the telephone diaphragm duplicates both the forward and back strokes of the telegraphic lever, and allowance must be made for the latter in attempting to read the induced message. It is for this reason that experienced operators, forgetting to make the proper allowance, find it at first difficult to receive the message thus "stolen" from lines with which the telephonic circuit has no connection whatever.—*Prof. Kedzie.*

The Climate of Kansas as Told by her Forests.

In the vicinity of Manhattan and in the Republican valley, the wood growth of the year 1869 was very large. This is true both on young and old trees. A section of an old oak from the Republican, furnished the College by A. B. Whiting, shows a remarkable growth that year as compared either with preceding or succeeding years. The same is true on sections of ash, elm and cottonwood from the same source.

We give below the average growth, from 1859 to 1874 inclusive, of fifteen cottonwood trees taken at random from the College uplands. The average growth of each year is given in hundredths of an inch:

1859	24	1867	36
1860	26	1868	26
1861	35	1869	56
1862	39	1870	16
1863	47	1871	42
1864	38	1872	32
1865	36	1873	31
1866	35	1874	11

It is worthy of note here that during a period of sixteen years, 1869 stands far in advance for its wood growth. We find the average diameter of the fifteen trees to be about eleven inches as the result of sixteen years' growth, while the growth of 1869 is a little more than one-tenth of the entire growth of the sixteen years. What was the cause of this remarkable growth? We find the rainfall during the months of April, May, June, July and August to have been 20.87 inches. But during the same period in the years 1872 and 1873 more rain fell, while the wood growth was considerably less. Hence, the amount of rainfall did not produce this result. But if we examine the meteorological tables for 1869, we shall find that copious showers occurred at short intervals during the entire growing season, so that vegetation was kept constantly in a vigorous condition; while with much rain in 1872 and 1873 there were periods of drought, in which vegetation suffered. We

find the rainfall of 1870 to have been only 9.48 inches, during the five months above named and the wood growth only .16 of an inch. During the same period in 1874 we had only 9.12 inches of rain, and the wood growth averaged only .11 of an inch. This year the effects of the extreme drought was intensified by the defoliation of the trees by the locusts.

These facts should establish the position that the deciduous trees do report with remarkable accuracy how each successive season has favored the development of wood, thereby giving us a clear insight into the peculiar climatic conditions that controlled that growth. If this be true during the period in which accurate meteorological records have been kept at the College, as is proved by actual comparison, then it must be true in regard to the long periods which are covered by our oldest forest trees. In the examination of these long periods, reaching back two hundred years or more, we are authorized then to take the known period covered by careful meteorological observations, as a measuring line for calculating the conditions of growth that prevailed in Kansas before its settlement by white men. If we go back as far as 1760, and compare one tree with another in its growth from that time on up to the present, we shall find several periods of remarkably large tree-growth, and several other periods of very small growth. Sometimes we find a period of several years together characterized by a large growth, as in 1772, 1773, 1774 or in 1782, 1783 and 1784, or as again in 1826 to 1829 inclusive. Then again we find periods of ten years together of almost a uniform medium growth; while periods of very small growth occasionally occur, but seldom extend over more than two years at a time.

After a careful review of the above facts and many kindred ones, we have been led to the following conclusions: That for a period of one hundred and fifty years, at least, the wood growth of our native forests, in the variableness of its successive seasons, is almost a perfect repetition of what we have witnessed for the last twenty years. If there have been years of small wood growth, they have been regularly alternated with years of large growth. As we call these ancient witnesses of the forest and compel them to testify, they tell us of frequent periods, scattered all along the years, when nature poured forth her bounty with a prodigal hand, surpassing at times in the exuberance of her gifts all within the range of our experience, if we except, perhaps, the year 1869. We are forced also to believe that through all these years there have been climatic irregularities, such as have marked the few years past. We may believe also that unassisted nature herself has settled, by the results attained in the face of fire and other hindrances, that forest culture in Kansas may be made a success. In view of these facts, it will be wise also for us to infer that these alternations of wonderful productiveness and partial failure will characterize future years as they have done in the past; and it remains for man, so far as he has the power, instead of indulging in quixotic dreams of cosmic revolutions, to counteract on the one hand unfavorable influences, and on the other make all possible provision for the contingencies of the climate. We may also come to the conclusion that it is not wise to infer because we have enjoyed three or four bountiful years, that the order of nature has been changed, for the testimony of the forest is that there were years long ago just as fruitful, before the white man had come with his plow, and smoke, and steam, and electricity.—*Prof. Gale.*

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 16, 1878.

Wild geese flying north to secure summer quarters.

The Farm Department sold a couple of steers last week at good rates.

The bids for the new College building will be opened on Monday, March 4th.

There was a strong and promising interest manifested in the students' prayer-meeting last night.

The monthly examinations will be held on Friday, March 1st, as the last Friday of February falls on the 22d.

As the twenty-second of February is a national holiday, the usual College exercises will be suspended on that day.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

This has been a juicy week—rain, mud; snow, mud; rain(snow). All of them at once; and the rest of the time, mud.

You can't fool the clover by calling this weather winter. It is green, but not green enough to swallow the statements of mathematical calendars.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

And now comes Architect Carr, who deposes and says that the new College building is not larger than the new Manhattan school-house, the first floor of the latter having 5,511 square feet, and that of the former 4,500; also, that it is not so expensive.

The old settlers are to have a reunion on the 22d, at the Adams House, where a dinner is to be provided, toasts proposed, and speeches made after the good old fashion. The exercises will be continued in the evening at the Christian Church.

And, likewise, a committee is arranging for a reunion of the new settlers. When, where and how it is to come off, we don't know.

GOT SHOT!

It is seldom that we are called upon to chronicle sad things. Yesterday afternoon at a quarter past three, Mr. John Smith, a young man of numerous connections, after paying us seventy-five cents for the INDUSTRIALIST, walked into town and got shot—two pounds, at the usual price, from a well-known merchant.

College Drill Club met Wednesday evening, A. N. Godfrey in the chair. Jurisprudence Committee reported rulings of previous meeting correct. A. E. Wilson brought before the house the subject of motions and ways of modifying them. Some time was spent in discussing and asking questions in relation to the subject. A. A. Stewart was appointed to present at the next meeting the ways to "defer action" and "suppress debate." The Jurisprudence Committee was requested to decide any question submitted to it by the Club or its members, in addition to regular duty of criticising the rulings of each session.

Considerable fun was had toward the close of the meeting, and the opposite sides indulged with great alacrity in motions to postpone, lie on the table, previous question, to commit, and to adjourn. Each one had an opportunity to do all the "sparring" he pleased and exhibit all the "parliamentary lore" he possessed.

A CORRECTION.

CHEMICAL LABORATORY }
STATE AGRICULTURAL COLLEGE, J
W. Marlett, Esq., Sec'y Blumenthal Farmers' Club,

DEAR SIR:—The statement which occurs in your report of the recent meeting of your Club, that I had "respectfully declined" to make an analysis of corn smut, is quite incorrect both in fact and inference. To the only member of your committee who has done me the honor to confer with me upon the subject, viz., Capt. A. Todd, I have repeatedly stated that I have begun and shall complete a thorough analysis of this smut; but in view of the fact that your Club has declined to co-operate with me in conducting practical experiments which could alone give the analysis a practical value, you have also forfeited your claim to dictate as to the disposition of the results of the analysis itself. I take this method of correcting a statement which, whether intentionally or not, does me injustice.

Very truly yours,
W. M. KEDZIE.

The Alpha Beta Society was called to order Friday, Feb. 8th, by A. H. Stiles, both President and Vice-President being absent. Chas. S. McConnell was chosen to act as presiding officer pro tem. The debate upon the question, "Resolved, That Major Andre should not have been executed," was with logical argument and "flowery" language won by the affirmative.

Mr. Younger delivered an excellent declamation, being one of the best ever listened to in the Society. Essay upon "Education," by Miss Clarke, was a finely-composed article. Mr. Clarke read a very sensible and instructive selection.

At next meeting the subject for debate is, "Resolved, That England has a better form of government than has the United States." Affirmative, G. F. Howard and Emma Glossop; negative, H. F. Coe and Miss Clarke. The *Gleaner* will be presented by G. L. Platt and Hattie Allen. The duties assigned for two weeks are: Declamation, C. O. Smith; essay, Miss Finney; select reading, Gracie Parker.

Owing to the inclemency of the weather, the attendance was below the average, only thirty persons being present; but a very pleasant and interesting session was enjoyed. We would be pleased to have all come and visit the Society, even if they do not intend to join. Come Friday and C.

The man who ever mentions "drouthy Kansas" should be hung up by the heels with his head in a rain barrel.—*Thayer Headlight*.

We print on our first page an interesting essay on Kansas Wheat Culture, by T. C. Henry, Esq., the celebrated wheat grower of Dickinson county. It was read before the Farmers' Society at Manhattan, and we copy it from the INDUSTRIALIST, a very bright little paper issued out of the Agricultural College at that place. We are sure it will be read with much interest in this section. Many of our people have gone to Kansas and more are either preparing to follow or thinking about doing so. Those who go there to farm should not carry with them the idea that the methods they have followed here with success and the varieties of wheat they have raised will be found to do best everywhere. In going to a new country, it is safest to follow the practice that prevails among the most successful farmers there.—*Valley Spirit, Chambersburg, Penn.*

The following is from H. C. Rushmore, under date of Feb. 11th:

We are in good health,—happy and prosperous. The weather is incomparable; the mud more so. "Business dull." The recent failures in Topeka caused a slight embarrassment among our merchants. No losses will be sustained, however; and we believe the banks will "pay in full." Personally, we lost just \$2.77—fact.

J. E. Williamson has left us. He is now principal in the Harrison Street School, Topeka. Our people disliked to part with him, and old students will be pleased to learn of his worthy promotion. Joe is a success as a teacher—one of the best in our county, and they rank high.

To say that our fruit is "safe," would be rather premature. The winter wheat is excellent in quality, but in quantity below an average. Corn is selling at twenty cents. Telephones (without wire) at a discount. We suggest that President Anderson name it "The Poor Can Man's Telephone."

We take this means of saying "How" to old student friends. Hope College is prospering.

Such are a few impressions of the English country; and the idea that seems most vivid in closing is, that in America Time is a destroying radical, in England, a very old conservative. With us, nothing will ever be old; in England, few things seem young or new. The perpetual moisture of which travellers complain so much keeps England—country England—cool and fresh and gently fair. It robs tower and wall and bridge of the gloss of newness, and gives, instead, the placid beauty of well-kept age. Alien though I am; born in the land of the prairie and the sun, as different a country from England as can well be imagined; I can well understand the sentiment which an Englishman feels for his own, his native land; not his country in an abstract sense; not her laws, her institutions, her history, but her very earth. No turf is brighter and greener than the English sod, unbroken by the plow since history began. Larger streams there are, but none more beautiful than those which mirror the primroses and the cowslips of England. Life runs with quicker flow in the towns of the new world, which spring up in the sunbright wilderness in a day; but I can well understand how, amid such, the Englishman's heart may pine for the single winding street of his native village's strawthatched cottages; the stone cross in the middle of market place; the square-towered church, with ivy overgrown; and the honest face of the village clock which told off the hours of his forefathers, and which he laid awake at nights and listened to as it measured his own. Such are the scenes which have inspired the noblest descriptive poetry in our language; such are the scenes amid which have been nursed souls,—brave, tender and true,—which, going abroad into all the world, for this two hundred years or more, have led mankind to a higher and brighter destiny.—*Prentiss, in "A Kansan Abroad."*

NATIONALIST ITEMS.

The sidewalk between the College and town is well appreciated by the students. It saves many a splash through the mud.

Umbrellas and overshoes are indispensable articles during the present extreme humidity of the weather and profusion of mud.

Ten cars went west on the express train last Thursday night, crowded with immigrants for Saline and Russell counties on the Kansas Pacific Railway.

Six car loads of splendid stock were shipped from here on Monday. We notice the exchanges give us credit for shipping from 20,000 to 50,000 pounds a day. It is from 50,000 to 200,000 pounds. Don't deprive us of one pound.

The Mechanical Department is making round tables, extension tables, dressing tables, etc., all of the very best quality. Those who wish good, tasty, substantial and cheap furniture, will do well to leave their orders with A. Tood, the Superintendent.

Hon. E. B. Reynolds, the apostle of temperance from Indiana, who has labored with such marked success in Lawrence, Ottawa, Fort Scott, Wyandotte and Kansas City, will open a series of meetings at the Presbyterian Church, on Monday evening, Feb. 18th. Everybody come.

From late accounts, we should judge there is some mud in the road up the Blue. A man driving a team and wagon, a few days ago, along the said road, lost one of the hind wheels, but the mud was so deep he did not miss it until some distance ahead he met another lone, muddy traveller who, seeing the condition of his wagon, inquired for the fourth wheel. He replied that he didn't know anything about it, but had noticed that the wagon was "sorter tipped."

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given

person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

TO BUILDERS.

Sealed proposals for the erection of a building for the Kansas State Agricultural College (estimated cost about \$12,000) will be received by the undersigned until seven o'clock P. M., on Tuesday, March the 4th, 1878. Plans and specifications can be seen after February 1st at my office in Manhattan, and at the office of E. T. Carr, architect, Leavenworth, Kansas. Bids will not be considered unless guaranteed by parties of known responsibility. The right is reserved to reject any or all bids.

N. A. ADAMS, Secretary.

Manhattan, Kan., Jan. 15th, 1878.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

A. A. STEWART, President.

MISS NENA M. WILSON, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

BERNARD ANDERSON, President.

CLARENCE E. WOOD, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.
Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.
Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDE, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending February 14th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 16, 1878.

The Press on the Agricultural College.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST'S" College at Manhattan. It is just the place for the growth and development of true, genuine American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

Is a credit to any State. Its facilities and courses are sufficient for furnishing an education equal to any of the eastern States.—*Cherry Vale Leader*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wyandotte Herald*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgewick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

"The Leading American Newspaper."

THE NEW YORK TRIBUNE FOR 1878.

THE TRIBUNE has long enjoyed the distinction of the largest circulation among the best people. During the year 1878 it will spend more labor and money than ever before to deserve that pre-eminence. It secured, and means to retain it, by becoming the medium of the best thought and the voice of the best conscience of the time, by keeping abreast of the highest progress, favoring the freest discussion, hearing all sides, appealing always to the best intelligence and the purest morality, and refusing to cater to the tastes of the vile or the prejudices of the ignorant. The continued popular approval, and the constantly widening political influence it enjoys, are the best proofs that it is still faithful to these early secrets of its strength.

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This has been for a third of a century the favorite paper for our substantial country population. A competent critic has said of it: "THE WEEKLY TRIBUNE has done more for the settlement and prosperity of the Great West, and has made more good farmers and good citizens than any other single influence that ever existed in this country." During the ensuing year it means not only to preserve all its old merits, but to take a long stride ahead. By the introduction of \$30,000 worth of new machinery, and by an enlargement of its size (making it the largest single sheet issued by any newspaper in the country), it is enabled to give subscribers what they have so long asked—their favorite paper in a shape easier to read and convenient for binding. Each issue consists of sixteen pages, of the form and general appearance of *Harper's Weekly*, but with pages considerably larger, and with unusually large and clear type. All the old and standard features are carefully preserved, while the new form and the additional size enable us to offer the following among many

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IV. *A Northern Farmer on Southern Agriculture*, by SOLOMON ROBINSON.

V. *Life and Sights in New York*, by Veterans of the City Staff.

These articles will not be mere reproductions from the daily papers. They will be prepared expressly for THE WEEKLY TRIBUNE, and will first see the light in its columns.

FOR FARMERS.

The Agricultural Department of THE WEEKLY TRIBUNE has always been recognized as beyond comparison with that of any rival. More good work and more money are now spent upon it than ever before. Among regular contributors to it are Professor JAMES LAW, the country's foremost veterinary authority; Professor L. B. ARNOLD, unequalled as an instructor in the fine art of dairying; Professor G. C. CALDWELL, of national reputation as an agricultural chemist; Professor C. V. RILEY, the well-known entomologist; Mr. JOSIAH HOOPES, the horticultural authority, and other agricultural specialists of the highest rank.

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THE INDUSTRIALIST.

VOL. III.

MANHATTAN, KANSAS, SATURDAY, FEBRUARY 23, 1878.

No. 45.

THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13—1.18
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73—1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical.....	14.63
In personal service.....	13.89
In trade and transportation.....	9.51—97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education. And every semi-occasionally some exceedingly brilliant genius will triumphantly announce his discovery of a mare's nest by shooting off the original conundrum, "Why, Mr. Speaker, is telegraphy, or printing, or dress-making taught in our Agricultural College?" The answer to which is that woman is entitled to such an industrial education as will enable her to earn a living, and, accordingly, that these trades are taught for her benefit, in accordance with the design of Congress.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the great central valley which runs through the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Going Out Into the World.

Young men, young women, crowding forward from the byways into the broad highway of life, may you do well the work that is waiting for your hands, realizing the obligation spoken of by Lord Bacon: "I hold every man a debtor to his profession; from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."

May your lives resemble not the desert's bitter stream, which mocks the cracked and blistered lips of the fainting, dying traveler; which but adds horror to the fiery desert and sinks at last into the burning sands, to which it brought no verdure, no gladness, from which it received nothing but poison and a grave. May the course of your lives find no counterpart in the sluggish course of the dull bayou, a fungus among streams, which winds and doubles and winds again through miles of rank vegetation, which curtain its dark course and shut out from its sullen waters the gladsome light of day; a waveless, tideless stream, in which reptiles of hideous shape crawl and glide and swim, and which at night seems to lie still in the darkness and listen to doleful and mysterious voices. May none of you ever live isolated from your kind, like those lakes which lurk amid dark, once volcanic mountains with no visible inlet or outlet; deep, self-contained, solitary, giving back no reflection save the dim images of scorched and barren rock, and splintered peaks; lakes on which nothing lives or floats, which hide forever in their dark bosoms everything cast into them.

But may your lives be like the river which rises amid the pure snows of the bold mountain; which, hurling itself over the cliffs, answers back the wild, free eagle's scream; which forces its way through the rocks that would impede it in its search for the valley; which slakes as it goes the thirst of the deer, and washes the roots of the pine tree from which the flag of the far-sailing merchantman is yet to fly; which turns the rude wheel of the mountain mill, and whirls in its eddies the gathering sawdust as it speeds from under the whirring, glittering teeth of steel it has hidden to rend the logs it has brought them. It grows wider and deeper and more silent and yet stronger, as it flows between smiling farms and thrifty villages which owe their existence to the bounteous river. At night it sends its mist over all the valley and half way up the hills, like sweet Charity who silently wraps in her sheltering mantle all the sons of men. It carries on its bosom all floating craft,—the light canoe, the slowly-drifting raft, the arrow-like steamer. In time, its wavelets give back at night, in dancing gleams, the thousand lights of the great cotton mill, and, anon, its waters part before the prow of the new-built ship, as she glides down the ways to the element which is henceforth to be her home. Thus goes the shining river, the ever-useful, ever-blessed river; best friend of toiling man; fairest thing from the creative hand of God;—thus goes the river to mingle at last forever with the sunlit sea.—*Prentiss, in "A Kansan Abroad."*

The Ways of Tramps.

Two Massachusetts detectives were last summer detailed to assume the role of the tramp, and gather information as to the character and habits of that fraternity. Starting out from Springfield, the first fell in with a couple who were disposed to be friendly and confidential. They were Irishmen, thirty and forty-five years of age—the one a shoemaker, the other a tailor. Both could get work if they desired, but preferred to tramp. They only worked when they wanted money to get liquor, and not then if they could steal it. One had tramped five, the other eight years. As a rule, they could get very little food by begging—only dry bread and milk. What they ate, they generally stole, and recommended the detectives to do likewise.

After parting from these communicative

and unsuspecting vagrants, the next person interviewed was a Frenchman. His plan was to tramp through the country in the summer and fall, going to some large city as cold weather came on. There he would get arrested for some petty crime, and spend the winter months in the congenial retirement of a prison. His personal effects, including four bottles of gin, were carried in a valise.

On a following day the travellers met three tramps, who took them to a rendezvous in the woods, where were gathered fourteen others. Of these, three were German, two Dutch, one Swede, one French, three Americans, and two Irish. The party had already been in the place five days, subsisting upon chickens and potatoes abstracted from neighboring farm-houses. For securing the chickens, such ingenious expedients were adopted as fishhooks baited with corn, and bread soaked in rum.

In leaving this retreat, the party divided into four squads, those who went first marking with chalk the prominent points in the route, for the guidance of those who were to follow. Nearly all of the regular tramps carry chalk of different colors. On coming to villages, they would go through separately, and meet again outside. Plenty of food was obtained by begging and stealing. Old men more frequently excited compassion than young ones. The latter, when they were asked why they did not go to work, always professed readiness, but represented themselves as being familiar with some trade which they knew would not be practiced in that locality.

During the last week of these travels, the detectives encountered large numbers of men on their way to the railroad riots in Pennsylvania. At one point, about twenty miles from Pittsfield, they met a gang of thirty-three, and were told that there were in the woods, along the line of the Boston & Albany Road, not less than four hundred others, expecting a strike to occur there. These outlaws were ready for any plan of pillage and destruction that might be proposed.

It is the testimony of the detectives that of the entire number with whom they conversed, they found but two who did not scout the idea of going to work for the purpose of earning an honest livelihood, and they express doubt whether even these two were ready to engage in any laborious employment.—*Exchange.*

Education in Russia.

Every city in the Russian Empire has its lyceum, and every town its grammar school. In the lyceums, French and German are taught; in the grammar schools, German sometimes, but not always. English can be learned at only St. Petersburg, Moscow and Odessa, except by private tuition. The charges for maintaining a boy as a boarder vary from \$200 to \$750, and at the aristocratic military school of St. Petersburg extracosts generally bring the sum up to \$1,250. Russian boys sleep in dormitories; and it is only within the last fifteen years that they have been allowed bedding. Formerly they curled themselves up in rugs and lay down on wooden cots. Possibly this practice still prevails in some of the inland schools. Their fare is the eternal cabbage soup, with beef; and tea, with bread, and no butter. They wear a uniform—a tunic in summer, and in winter a caftan, like an ulster coat, with the number of their class embroidered on the collar. Their heads are cropped close, and they walk upright as ramrods; for the most thorough part of their education consists in drill. They are usually quiet boys, very soft spoken, and not much addicted to romping—having no national game beyond that of leap frog, which they play in a large empty room warmed like that of a hot-house. They spend their money in cigarettes and in sweetened rum to put in their tea. These delicacies are forbidden, but can always be had of the school porter for a little overcharge. There is no corporal punishment nominally, since the present Czar abolished the birch by a special ukase; but discipline

could scarcely be maintained among Russians without cuffing, so the Professor cuffs his scholars, and they cuff each other with national heartiness.

A Suggestion to Consumptives.

Dr. George H. Napheys, an eminent physician, says: "A particular kind of exercise is to be recommended for those whose chests are narrow, whose shoulders stoop, and who have a hereditary predisposition to consumption. If it is systematically practiced along with other means of health, we would guarantee any child, no matter how many relatives have died of this disease, against its invasion. It is voluntary inspiration. Nothing is more simple. Let her stand erect, throw her shoulders back, and the hands behind; then let her inhale pure air to the full capacity of her lungs, and retain it a few seconds *by an increased effort*; then it may be slowly exhaled. After one or two natural inspirations let her repeat the act, and so on for ten or fifteen minutes, twice daily. Not only is this simple procedure a safeguard against consumption, but, in the opinion of some learned physicians, it can even cure it when it has already commenced.

Butter.

England imports about 80,000 tons of foreign butter, at an annual cost of nearly \$44,000,000. The most of it comes from Continental Europe where it costs a great deal more to make it than it does in this country. The reason of this is that the most of the butter made in the United States is of poor quality. If our farmers generally would pay more attention to this matter, it would not be long before the largest part of that \$44,000,000 would come into our pockets. We hope it will not be long before the Agricultural College will have a dairy department, so that those who desire to can learn how to make really good butter.—*Nationalist.*

THERE are a great many poor cows, and many miserable bulls kept in the country, which should be got rid of as soon as possible; but there are also a great many good cows, nearly or quite equal to some of the pure-bred ones, and these ought to be carefully preserved for perpetuating the race. Every farmer should preserve his best breeding animals. If he must sell some, let it be the poorest, even if he cannot get half as much for them.—*Nationalist.*

A SOLUTION of bicarbonate of sodium applied to burns promptly and permanently relieves all pain. A laboratory assistant in Philadelphia having severely burned the inside of the last phalanx of the thumb while bending glass tubing, applied the solution of bicarbonate of soda, and not only was the pain allayed, but the thumb could be at once freely used without inconvenience.—*Exchange.*

THE physicians of public institutions at Jersey City have been instructed to make their reports in plain English. A director complained that they charge 23 cents a pound for castile soap, calling it "sapo nespano," but if they called it castile soap the price would only be 11 cents. Another member objected to such a familiar article as whisky, being designated as "spiritus frumenti."

AN insurance agent happening to meet a lion, asked him if he would insure his life. "No," responded the monarch of the forest with a resounding roar, "nor yours." Thus saying he tore the unhappy man to pieces, and fed on his damaged cheek and other more penetrable portions.

Moral.—There is such a thing as being instant out of season.—*New York World.*

Ex-Gov. WASHBURN has tendered to the State of Wisconsin his beautiful country seat, Edgewood, two miles from Madison, beautifully situated on the shores of Lake Wingra, together with sixty acres of land, for an industrial and reformatory school for girls.

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 28, 1878.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE INDUSTRIALIST will be sent as a prize for the best spelling, figuring and writing, on the order of Kansas teachers.

THE members of the Board of Regents will please take notice that the meeting set for February 13th will be held on Tuesday, March 5th, at 7 P. M.

Chirography.

Not one in five of the citizens of Kansas possesses anything like a respectable degree of penmanship. Children are allowed to form habits of awkward positions of the body and hand while writing, make awkward motions, and the result is the production of very awkward characters; and these habits are liable to follow one through life.

To write a communication which severely taxes the time and patience of the reader to decipher, is an unpardonable sin because it is an unnecessary one; while a neatly-written manuscript puts the reader in a favorable mood to receive it, both by affording a pleasing sensation to the eye while perusing it, and by the ease with which the thoughts of the writer are ascertained.

In order to produce forms correctly, the mind must have a clear perception of those forms, and a discipline of the muscles of the hand and arm to produce that which is in the mind. The elements of which the small letters are composed are few, not to exceed eight, while four additional elements with slight variations form all of the capitals.

Now, the teachers of our common schools should see to it, first, that the pupils form habits of correct, natural, easy positions and motions while writing; second, that they have clear perceptions of the forms of the element; and third, that they have sufficient drill upon those forms to enable them to make them with a good degree of accuracy and speed. It is said that penmanship runs in the blood, and therefore those who have no natural knack for it are excusable for poor writing; but if teachers would observe the above directions, all our pupils would become creditable penmen. Speed and accuracy should be combined in a drill upon the elements; for no matter how well the element is made, if it be done very slowly, as soon as the person begins to write with the speed required in business, he makes elements which are no more like the true ones than a pig is like a rooster. To this end the class should be required to write the elements in regular time in concert, the teacher counting at first slowly until the true form is approximated, then increasing the speed, holding to accuracy as much as possible, until a rapidity required in practical life is reached. The pen should be guided mainly by the muscles of the fore-arm instead of entirely by the fingers, for the reason that these muscles can be brought under more complete control, as it regards slant and height, than those of the fingers, in rapid motions. Let it be kept before the mind that regularity in height, slant and width is required in order to present a pleasing appearance; and if to this be added something near accuracy of elemental form, writing can be read as rapidly as printing.

An additional reason why this part of education should be cultivated is that persons who write poorly or slowly usually dread it, and therefore procrastinate when they should write. If one can write easily, neatly and rapidly, he derives pleasure instead of pain from the employment.—*Prof. Platt.*

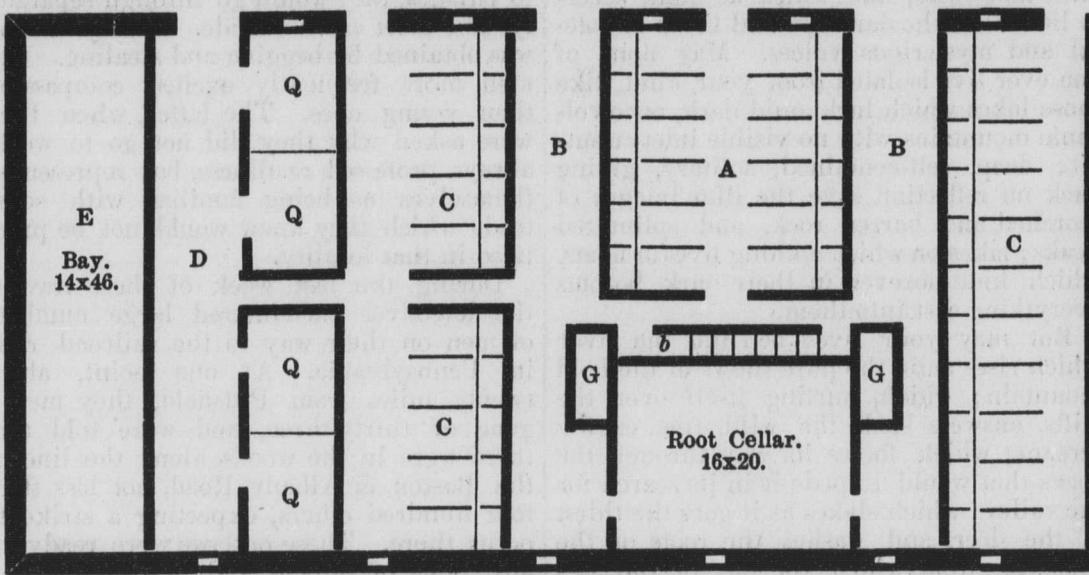
The New College Barn.

A General-Purpose Barn, Costing \$4,000.

We give below the plan of the basement and ground floors of the new College barn, erected during the past summer at a cost of \$4,000. This barn is called in the heading a general-purpose barn; although perhaps strictly speaking it is a general-purpose barn having a strong bias in the direction of the stock barn. It is calculated, as its name implies, for that system of farming commonly called "mixed husbandry," in which the growth of grains, of forage plants, and stock raising have about equal prominence in the general farm economy.

The barn is situated on a side-hill of moderate slope, in which the basement is placed. It faces the west, the yard, into which all the basement doors open, being in the east side. Although not in the geographical centre of the home farm, it is as nearly equidistant from the extremes of the two farms as could be obtained without risking more important considerations. A perennial stream of water flows within five rods of the barn-yard, and an excellent and enduring spring has been found within four feet of the surface within the barn-yard enclosure.

This barn is 97 feet long and 48 feet wide, one story and basement; is of lime-



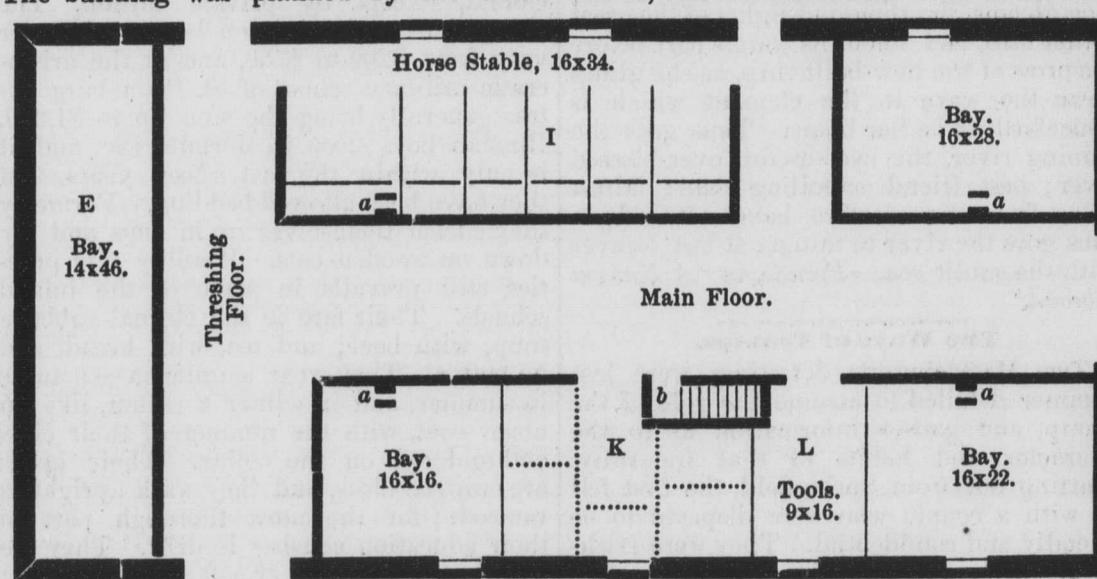
PLAN OF BASEMENT.

stone, put up in the best style of rubble-work, all the arches of the doors and windows, and all jambs and door sills of the basement, being of cut stone. The basement is 9 feet 6 inches and the upper story 16 feet in height. It furnishes bay room with good mowing for 200 tons of prairie hay, or its equivalent in other fodder or straw; its granaries will contain 2,000 bushels of grain; and it has stall room for 32 head of cattle and 7 horses, with 4 box stalls for bulls or for cows requiring extra room. The building was planned by the writer

The feed is poured into the bin from the floor above, through hoppers not shown in the cut.

ROOT CELLAR.

The root cellar will hold nearly or quite 2,000 bushels of roots. While nominally a root cellar, this compartment is really cut in two by a partition not shown in the cut, one-half being used as a store-room for coarse tools, plows, harrows, etc. The roots are poured from the wagon on the outside of the barn through the window into the cellar, and are taken from there to the slicer



PLAN OF GROUND FLOOR.

with reference to the wants of Kansas farmers, and in the hope that it might furnish to them—and especially to the students of the College—some useful hints in the construction of farm buildings. The drawing and specifications were made by the well-known architect, Mr. E. T. Carr, of Leavenworth.

in the alley and distributed to the cattle on either side.

BOX STALLS.

The four box stalls marked Q are two of them 10x10 feet and two 10x11 feet. They are designed chiefly for bulls and other animals requiring more room and stronger quarters than ordinary stalls furnish. We

find great advantage in using these boxes for cows during calving time and for sick animals generally. The boxes are boarded up with rough lumber to the height of six feet, and have earth floors. Each stall opens into the alley D, through which the animals are led and manure wheeled. Hay for the animals is conveniently obtained from the great bay E, which extends from the roof to the floor of the basement.

The main floor is about three feet above the ground level, and entrance is gained either at the front or end of the building, by easy approaches of earth and short bridges of slight slope. The width of these main door-ways is 12 feet, and the main and threshing floors are 13½ feet, a space amply sufficient for the easy passage of the largest loads.

BAYS.

The bays need little description beyond that given in the cut. In addition to the bays, the lofts over the horse stable, granary and tool room furnish a great extent of mow room; while even this may be increased if desired by covering over most of the main floor and employing this loft for the storage of grain and hay.

THE GRANARY,

marked K, is 15x20 feet deducting stairway, and is divided, by firm partitions four feet in height, into five bins of variable size. The alley opening into the main floor is six feet in width, furnishing ample room for operating a fanning-mill, stowing sacked grain, etc.

THE HORSE STABLE

occupies a space on the ground floor 16x34, and consists of five single stalls and one double one. Each stall is 5x9 feet, including manger and exclusive of the alley seven feet wide passing at the rear. At the rear of the stall is a blind gutter, sunk six inches beneath the floor and covered by a plank on a level with it, which carries the liquid excrement to the basement drain at the rear of cattle stalls.

THE VENTILATORS,

marked a in the cut, are shafts 3x3½ rising perpendicularly from the floor to near the roof, the direction of which they follow to the apex, where they terminate in two double-roofed cupolas. These shafts are made of smooth-planed lumber, and are provided with trap doors in their sides through which fodder is pitched to the cattle in the basement. Additional ventilation is provided for in the basement by the thirteen area windows, each of which is hinged at the top, and by means of rope and pulley may be opened or closed as may be needed. Thus far, the light and ventilation of the basement, obtained by these simple means, leaves almost nothing to be desired.

The stairway leading from basement to ground floor is indicated by b in both cuts.

This concludes our somewhat hasty glance at the details of this building. There are other matters that properly belong in this description, as style of manger, methods of fastening stock, etc., which we hope to give in a future number of the *INDUSTRIALIST*. Of the barn in general we can say, after occupying it five months, that it has been most satisfactory to the men working in it and to the animals as shown by their improved condition. In answer to the question whether the investment is a profitable one, I can only point to the fact that our stock has kept in better condition the present winter with little more than half the fodder used in the same time last winter, when they occupied the old shed.—*Prof. Shelton.*

THE INDUSTRIALIST.

SATURDAY, FEBRUARY 23, 1878.

The examinations for February will be held next Friday.

The mud has dried up, and now it's time for the growers to dry up.

We devote an unusual proportion of space in this issue to the new barn.

The Kansas ice man isn't a nice man. That's old, but unfortunately true this year.

Teachers are taking up our offer to send the INDUSTRIALIST as a prize for spelling, etc.

We are so terribly busy this week that our letters except business ones have had the go by.

Say! Which party knows the most about the weather business, the wild geese or the other geese?

The Manhattan Homestead, L. R. Elliott, editor, is out again, and is chock-full of information valuable to immigrants.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

Bidders will take notice that their little propositions concerning the new College building are to be handed in on the fourth of March.

Miss Carrie Humphrey, a former student of the College, has been visiting with her friends here this week. She hopes to attend next term.

We learn from the Manhattan Nationalist that Miss Ella Thompson, a former student of this College, was married at Irving, February 13th, to Mr. E. L. Preston.

A copy of the *The Youth's Casket* is on our table. It is a neat little two-column paper edited and published at Junction City by J. A. Truex, County Superintendent of Davis county.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Yesterday was the middle of spring. The birds were singing and the buds talked about coming out. To-day is the latter part of winter. The wind is in the north, and the clouds are threatening all sorts of things. But if the wild ducks know anything about their business, spring is at hand.

We hereby pat A. A. Stewart on the back. Those diagrams over there are "rule" work, which the same he set up. The craft will appreciate the job. Mr. Walters furnished the geometrical plan, and Stewart has distinguished himself as an engraver with rule. May be this establishment can't teach printing.

The twenty-second was duly and numerously observed. The old settlers ran their speeches and dinner at the Adams House. The new settlers ran their dinner and speeches at Peak's Hall. The newer settlers, the students, ran a splendid dinner, cooked and spread in the Kitchen Laboratory, into themselves, and took their speeches on toast. The newest settlers generally staid at home and took their refreshments in the good old way.

The question debated by the Websters last Saturday evening was, "Resolved, That there is no harm, mental or physical, in moderate dancing." It was decided in favor of the affirmative. Under the order of new business, it was decided to have another moot-court on Saturday evening, March 2d. Messrs. Reeves and Scott were chosen to draft a programme for the occasion. Everybody is invited to attend, and a good time is promised. The question selected for next meeting is, "Resolved, That the resumption act of 1873 should be repealed." The debaters chosen are: Affirmative, Scott, Mason and J. B. Dickson; negative, Reeves, Beacham and Burr.

REPORTER.

As Prof. Kedzie has published a statement, or correction as he calls it, of the report of the Secretary of the Bluemont Farmers' Club in regard to the analysis of the smut furnished him, in which he uses my name, I deem it due to myself that a statement from me of my connection with the matter should also be published. The following is the request sent to Prof. Kedzie by the Club:

MANHATTAN, Feb. 4th, 1878.

Prof. Wm. K. Kedzie,

DEAR SIR:—The Bluemont Farmers' Club had the subject of your proposition again under consideration this Monday evening, of furnishing you a subject for experiment. The committee to whom the matter was referred having failed to procure

positively such subject within reasonable distance (the one offered being fifteen miles away), the Club resolved, considering the lateness of the season, to drop further efforts at present to comply with your proposition, and to instruct the committee to respectfully ask you to make a careful analysis of the smut sent you, and have the result published in the INDUSTRIALIST for the satisfaction of farmers and others who desire to know what its component parts are.

Yours, very respectfully,
C. C. DUNCAN,
R. KIMBLE,
A. W. ROLLINS,
A. TODD,
Committee.

To the above the Professor replied that he was making the analysis in connection with other parties; and, considering it a private matter, therefore saw fit to take his own way of publishing the result, declining to publish it under the auspices of the Club, or to publish it in the INDUSTRIALIST.

A. TODD.

The celebration of the 22d by the students of the College was a very pleasant affair. The dinner, from 2 to 5 P. M., was given in the Kitchen Laboratory under the management of Mrs. Cripps, who was the originator of the whole plan. Exercises of the day, commencing at 5:30 and continuing until nearly 7 o'clock, were as follows: Singing of doxology. Prayer, by Prof. Gale. Music, by Prof. Platt's advanced singing class. "Why we Celebrate," by G. L. Platt. Music, "The Sunbeams are Glancing." "Eulogy on Washington," by A. N. Godfrey. Chorus, "Light and Gay." "Influence of Washington's Example," by C. S. McConnell. Music, "Farmer's Song." Address by Mr. Torrington. "Intellectual Improvement," by A. E. Wilson. Exercises closed by chorus, "Evening."

The speeches with one exception were from members of the Senior class, and were very creditable, both to themselves as a class and to the Institution especially, considering the limited time they had for preparation, the whole affair having been gotten up within two days. Mrs. Cripps was assisted by her class in Household Economy and Misses Buell and Humphrey of last year's class.

President Anderson and Prof. Shelton and wife dropped in on us during dinner—not to eat but to look on. Toasts were offered to the Senior class and Mrs. Cripps. Many thanks are due to Mrs. Anderson, Mrs. Gale and Mrs. Coe for assistance rendered in the way of dishes, viands, etc.; also to Miss Steele as organist. A social was held in the sewing and music rooms during the evening.

S. H. W.

NATIONALIST ITEM.

Frogs and blue-birds are in tune. The mud is fast becoming a thing of the past.

The peach buds are yet uninjured in the College orchards.

Clover on the College grounds is assuming a very respectable shade of green.

Mr. Donaldson, the new landlord at the Adams House, took possession last Friday, and Bird Stanton left for Topeka on Sunday.

Prof. Kedzie is putting up sets of minerals for teachers, to be used in connection with his work on "Agricultural Geology." Each set contains over sixty of the most important minerals and soils mentioned in his book.

Prof. Kedzie is preparing a book for the press, to be called a "Manual of Elementary Chemistry." It is to be upon the same general plan as that of his work on "Agricultural Geology," which has met with such abundant success. It will supply a want long felt by educators for simple, concise and comprehensive text-books on chemistry.

The College has received from C. S. Sargent, of the Harvard Botanical Gardens, a fine lot of trees, both evergreen and deciduous. This collection embraces several hundred species, some belonging to our State, but many new and untested trees. They will be given a thorough trial in our droughty (?) climate, and the result cannot fail to be of interest to the State.

The Horticultural Department has received a valuable collection of woods from Prof. R. F. Kedzie, of the Michigan Agricultural College. This collection consists of over ninety species of wood growth, all neatly prepared and named, embracing all the principal species of Michigan timber. It is a valuable addition to the Botanical Cabinet, and, with the collection of Kansas woods already made by Prof. Gale, will be an important feature of the department.

W. C. Stewart, of the Agricultural College, is here on a visit to his father-in-law, R. L. Weeks, where Mrs. Stewart has been staying for some time past. *Irving Gazette.*

"Who cares for a slight dab of mud here and there?" shrieks the Manhattan INDUSTRIALIST. No one, that we are aware of; it is one big dab of mud that makes us mad.—*Peabody Gazette.*

Once a week the INDUSTRIALIST, of Manhattan, reaches our table. Somehow we open its condensed pages for a literary treat the first thing after scanning the dailies. It is one of the best news and literary journals in the country.—*Valley Republican.*

Albert Griffin lectured on temperance at the Baptist Church last Sunday afternoon. His address was an able one, and produced a marked effect for good. It was quite a contrast to some we have been treated with lately.—*Wamego correspondence Louisville Reporter.*

We are pained to see no students from Crawford county registered at the State Agricultural College. If our readers could realize that this is one of the best schools in the U. S., and that the tuition is FREE, we believe they would wake up—may be.—*Cherokee Banner.*

The INDUSTRIALIST is an attractive weekly paper published under the auspices of that enterprising institution, the Kansas State Agricultural College, at Manhattan, Kan. Subscription, 75 cents. All about Kansas and agricultural education.—*Western Agriculturist, Quincy, Ill.*

The succession of fields and pastures is often broken by the parks of the nobility. A park is simply an enclosed wood, such as cover about half of the eastern United States. These grounds were originally kept for the deer they contained, but I think they are now maintained for the enjoyment of that seclusion which an Englishman associates with dignity, power, glory, self-respect and so on. A man's fortune or social position in this country may be known by the number of bolts and bars that shut him in. When in merely comfortable circumstances, the man has between him and the public a small door-yard and iron fence, and keeps his front door locked. A higher grade and a longer purse is designated by a large yard so full of shrubbery that you cannot see the house, and a lock and bell to the front gate, which opens through a very high iron fence suitable for a penitentiary. Greater grandeur manifests itself in the shape of a high stone wall around the premises, the top thereof bristling with broken glass set in mortar to prevent any one from climbing up and looking over at the august owner. Finally, a landed gentleman or nobleman incloses all the ground he can get hold of with a prison wall, devotes the ground to a wilderness, and lives in the midst of his forest as happy as a most imperial snail in his ancestral shell. To get at him in this magnificent retreat, it is as necessary to apply at the lodge gate, and go through as many formalities as are requisite in order to see the emperor of China, who is brother to the sun, uncle to the moon, and attorney for the planets generally.—*Prentiss, in "A Kansan Abroad."*

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industries primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held par-

amount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

TO BUILDERS.

Sealed proposals for the erection of a building for the Kansas State Agricultural College (estimated cost about \$12,000) will be received by the undersigned until seven o'clock P. M., on Tuesday, March the 4th, 1878. Plans and specifications can be seen after February 1st at my office in Manhattan, and at the office of E. T. Carr, architect, Leavenworth, Kansas. Bids will not be considered unless guaranteed by parties of known responsibility. The right is reserved to reject any or all bids.

N. A. ADAMS, Secretary.

Manhattan, Kan., Jan. 15th, 1878.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend. A. A. STEWART, President.

MISS NENA M. WILSON, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

BERNHARD ANDERSON, President.

CLARENCE E. WOOD, Secretary.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.

Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.

Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

H. S. Roberts, M. D.—Office south side of Poyntz Avenue, between Third and Fourth streets. Residence corner of Third and Pierre streets.

16

Vocal Music.—Regular instruction and drill in the science and art of vocal music, without charge. Recitations in these classes are not reckoned as an "industrial."

Clothier.—Wm. Knostman, dealer in Ready Made Clothing, Hats, Caps, and Gents' Furnishing Goods. A well selected summer stock on hand. Opposite post-office, Manhattan. 11-26

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THE INDUSTRIALIST.

SATURDAY, FEBRUARY 28, 1878.

The Press on the Agricultural College.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courier*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*La Crosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Larned Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST'S" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could do no better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

Is a credit to any State. Its facilities and courses are sufficient for furnishing an education equal to any of the eastern States.—*Cherry Vale Leader*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*.

The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wyandotte Herald*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

This is the only school in the State which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courier*.

Has become just what it was intended to be,—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

"The Leading American Newspaper."

THE NEW YORK TRIBUNE FOR 1878.

THE TRIBUNE has long enjoyed the distinction of the largest circulation among the best people. During the year 1878 it will spend more labor and money than ever before to deserve that pre-eminence. It secured, and means to retain it, by becoming the medium of the best thought and the voice of the best conscience of the time, by keeping abreast of the highest progress, favoring the freest discussion, hearing all sides, appealing always to the best intelligence and the purest morality, and refusing to cater to the tastes of the vile or the prejudices of the ignorant. The continued popular approval, and the constantly widening political influence it enjoys, are the best proofs that it is still faithful to these early secrets of its strength.

THE WEEKLY TRIBUNE.

This has been for a third of a century the favorite paper for our substantial country population. A competent critic has said of it: "THE WEEKLY TRIBUNE has done more for the settlement and prosperity of the Great West, and has made more good farmers and good citizens than any other single influence that ever existed in this country." During the ensuing year it means not only to preserve all its old merits, but to take a long stride ahead. By the introduction of \$30,000 worth of new machinery, and by an enlargement of its size (making it the largest single sheet issued by any newspaper in the country), it is enabled to give subscribers what they have so long asked—their favorite paper in a shape easier to read and convenient for binding. Each issue consists of sixteen pages, of the form and general appearance of *Harper's Weekly*, but with pages considerably larger, and with unusually large and clear type. All the old and standard features are carefully preserved, while the new form and the additional size enable us to offer the following among many

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IV. A *Northern Farmer on Southern Agriculture*, by SOLOMON ROBINSON.

V. *Life and Sights in New York*, by Veterans of the City Staff.

These articles will not be mere reproductions from the daily papers. They will be prepared expressly for THE WEEKLY TRIBUNE, and will first see the light in its columns.

FOR FARMERS.

The Agricultural Department of THE WEEKLY TRIBUNE has always been recognized as beyond comparison with that of any rival. More good work and more money are now spent upon it than ever before. Among regular contributors to it are Professor JAMES LAW, the country's foremost veterinary authority; Professor L. B. ARNOLD, unequalled as an instructor in the fine art of dairying; Professor G. C. CALDWELL, of national reputation as an agricultural chemist; Professor C. V. RILEY, the well-known entomologist; Mr. JOSIAH HOOPES, the horticultural authority, and other agricultural specialists of the highest rank.

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Any old subscriber to THE SEMI-WEEKLY TRIBUNE can avail himself of the same offer by sending the regular price for that issue for five years' subscription, \$15, in the same way.

Thus, any subscriber to either edition, renewing his subscription for five years at the regular rate to single subscribers (or renewing for only two years, and getting three new subscribers) gets five years of his favorite paper for nothing, and the great Dictionary for \$2 less than its regular price; or he gets his paper at the regular price, and the great Dictionary for nothing—whichever way he pleases to count it!

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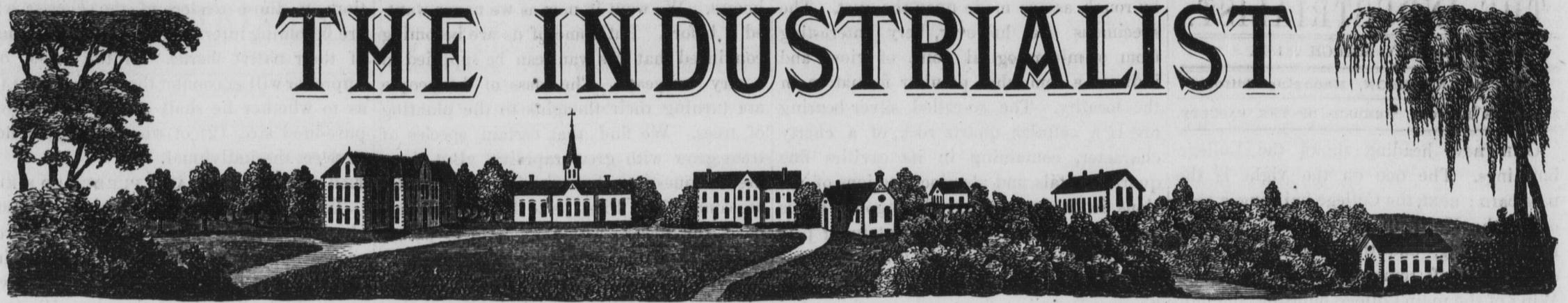
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KANSAS STATE AGRICULTURAL COLLEGE.

Board of Regents.

J. LAW

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, MARCH 2, 1878.

No. 46.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Ten cents per month, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription.

Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13= 1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73= 1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51= 97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the finest agricultural State in America.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dressmaking, printing, telegraphy, carving, engraving and music.

Lime in Soil.

The total quantity of lime taken up from the soil of an acre by an average corn crop of 50 bushels, of 60 pounds to the bushel, and 6,000 pounds of stover, would exceed 25 pounds. A good crop of clover, 5,000 pounds of hay in two cuts, would require about 120 pounds of lime. A crop of wheat of 25 bushels, with 2,500 pounds of straw, would not require more than 10 pounds. A fair crop of potatoes—9,000 pounds or 160 bushels at 60 pounds to the bushel—would not need more than 3 pounds. A crop of 20,000 pounds of beets, only 7 pounds; and of 3,000 pounds of timothy hay, about 34 pounds of lime. When we look a little further into the matter, and see how small a proportion of this lime is actually exported from the farm in the crops ordinarily sold, and how large a proportion goes back to the soil from which it came, in manure, the little need of taking pains to supply lime to plants for food, will become still more plainly apparent.

On any well-managed farm the hay is usually all eaten by the stock; so that none of the lime in that part of the produce of the farm, is exported. What little is retained by the young, growing animals for the production of bone substance, is more than made good by the lime in the water which the animals drink. In cases where a careful comparison has been made between the compositions of the manure of a mixed herd of cattle, more lime has been found in the total manure than in the total fodder supplied, and this excess could have been derived from no other source than the water.

The lime in the clover and timothy is not then lost to the farm, if the manure is cared for in any decent manner. The same is true of the wheat and other straws, of the cornstalks and roots. But in the acre's yield of Indian corn, taking the grain alone, there are only about two pounds of lime, and in the wheat but little more than one pound. In the cereal grains we should have similar insignificant quantities of lime; and even if the potatoes are sold off the farm, as is often the case to a large extent, the stock of lime in the soil of every acre producing potatoes is diminished to the extent of only three pounds. At these rates of demand, it would take a long time to make much impression on the reserve supplies of lime in the soil, when such reserves amount to from one thousand to two thousand pounds.—*Prof. Caldwell, in an Exchange.*

Watching a Rifle Ball.

Three gentlemen, members of the Rochester Amateur Rifle Club, on a recent afternoon were in the town of Brighton target-shooting. The distance was twenty yards; all three were shooting Creedmoor rifles. From the firing point the target the ground gradually ascended, so that a small telescope, but a good one, firmly fixed to a tree, at a distance of perhaps thirty feet, made a fine point for observation. One of the shooters, while looking through the glass to mark a shot of one of his companions, exclaimed that he saw the ball as it sped on its mission. The announcement was received with incredulity; but one of the other shooters went to the glass, and he also saw the ball almost as it left the gun, and through its whole flight, nearly the whole line of its trajectory, until it struck the target. So interesting and beautiful was the sight that every shot was watched by one or other of the gentlemen; and it is an actual fact that the point at which the ball would strike the target could be seen before the ball struck. It was even insisted upon that the rotary motion of the ball could be observed.—*Exchange.*

Bee Culture.

It is now only a few years since the invention of movable comb hives has opened up a new era in bee keeping, and placed it on the basis of a successful business pursuit. Such hives, adapted to climate, furnish every facility for intelligent management of bees by regulating swarming, guarding against moths, and manipulating both bees and comb.

The invention of the extractor, or honey slinger, a machine which empties the honey from the combs by centrifugal force, without injury, so that the combs may be returned to the bees, marks another great step in apiculture. Thus virgin honey, free from foreign admixture, is obtained, having the flavor of the flower from which it is drawn.

The further invention of artificial comb foundation, made of pure wax, first successfully used to a large extent last season, completes the requisites for placing bee keeping on the basis of a great industry in our country. Bees receive this artificial comb foundation with readiness.

Simultaneous with these improvements, the introduction of Italian bees and improved modes of rearing queens, of transporting and introducing them to colonies, has greatly improved the value of the honey gatherers, both because of the superiority of the Italian bee and the introduction of new blood.

The great drawback to apiculture is the sting of the bee. Danger from this source is now largely overcome by the simple appliances used for the protection of the person and for subduing the bees.—*Western Agriculturist.*

Caxton's Cussedness.

There was a wonderful array of old books, particularly those printed by Caxton himself. I looked even at the pages of the first book printed in England. I suppose I ought to have burst out in a torrent of eloquent eulogy on the "art preservative of arts," the palladium of liberty, etc., etc., etc., and have blessed the memory of William Caxton, but I did not. Seeing his work brought him very near to me. He looked at me, in fact, from the open pages of his book, with the same provokingly bland, innocent, benevolent expression he wears in Maclise's picture; it irritated me, and I felt as if, providing he could really "materialize," I would have addressed him thus:

"Mr. William Caxton, you were originally a mercer, and you were also an ambassador, and one with just the statutory amount of common sense would suppose that that was a sufficiently fat take for you, but you must needs go into the printing business. Now then, what for? You say that the Duchess of Burgundy wanted you to print the 'Recueil of the history of Troye,' and you did it; yes, and Eve wanted Adam to eat the apple and he did it; and Herodias had an anxiety for the head of John the Baptist and she got it, and Lady Macbeth wanted Mac to give old man Duncan a fatal prod, and he did it. He never even gave 'the old man a chance.' You didn't foresee the consequences, you say, when you set up your book, newspaper and plain and fancy job printing establishment in Westminster Abbey. You didn't know, now honest? You didn't think there would ever be such a thing as a tramping jour did you? You didn't see the head of the blooming old procession that has been about three hundred years passing a given point? You wasn't prepared for that gay old cortege; that innumerable caravan, were you? It didn't occur to you about the 'banner,' and the very rum lot who were to putt in their time carrying it? Your prophetic eye did not see the long string of red noses and sore

eyes and sunburnt necks and blistered heels? You never thought of the fellows who would sleep on the bank, and under the bank, and behind the stove, and down in the press-room among the greasy rags and wrapping paper and strings, and also repose their old bones betimes in the calaboose? No, you didn't think of any of these things we may well believe. You never dreamed, Bill, that some thousands of your fellow creatures would put their eyes out and grow old before their time and humpbacked in the flower of their youth, sticking type on morning papers. You never imagined how they would all stir the fire up; how the "old man" would blaspheme the foreman, and how the last named would make even by calling the learned and accomplished compositors a lot of goggle-eyed, slab-sided, knock-kneed blacksmiths. Bless your simple-hearted, ink-smearing old soul, nothing appears to have occurred to you! You didn't hear sounding down the ages anything about "a few cords of dry wood wanted at this office immediately," nor the loud and exceeding bitter cry for "any kind of country produce." You are responsible for all this, and you say you didn't think! And in that connection I may remark that that is what every meddling, mischief-making lunatic says. You didn't know the gun was loaded, and so you snapped it, and that is the way some fool kills somebody every day in the week. But you didn't think; you meant well, but were just an idiot, that was all. Probably if you had thought you would have hung the printing business on the dead hook, but you didn't, and it is now too late. The line is hair-spaced now, and it can't be helped. We are in the everlasting 'drag,' and are stuck for all night. Oh, William, William!"—*Prentis, in "A Kansan Abroad."*

LOOK after the nutrition of the trees. Some people say that land which will raise good corn will grow good fruit trees, which is all right; but they should add that, like corn, they require regular and continuous manuring. There are some parts of the country where corn can be successfully grown for half a lifetime without manure. On these soils we need not manure fruit trees; but in all others we must, to have good results. This is particularly essential where trees are grown in grass, as both the trees and the grass require food. Where trees are grown in grass, we prefer top-dressing in June or July; but if it has not been done then, do it now. Where trees are kept under clean surface culture, the manure is of course plowed or harrowed in with the crop in the spring of the year. To know whether trees require manure or not, ask the leaves. If in July they are of a dark rich green, nothing need be done to them; but if they have a yellow cast, hunger is what is the matter. This, of course, is supposing they are not infested by borers, in which case they will be yellowish in the richest soil.

FASHION kills more women than sorrow and toil. The kitchen maiden is healthy—her lady has to be nursed as from the bottle. The fashion-bound woman has no force of character, no moral will, no energy. She lives without one noble aim. She accomplishes no worthy ends. She saves nobody, writes no books, sets no rich example of virtue and womanly grace, gives birth to progeny without genius and those who never become eminent. The biographies of all our great men and women refer readers to strong-minded, healthy, virtuous, laboring mothers. Fertile soil produces vigorous plants.—*Kansas Herald.*

TEACHERS, send for the INDUSTRIALIST.

THE INDUSTRIALIST.

SATURDAY, MARCH 2, 1878.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

OUR new heading shows the College buildings. The one on the right is the new barn; next, the College building, a residence, the Horticultural building, Mechanical building, and the Laboratory. The one on the left represents the Agricultural Wing of the main College building, the bids for erecting which will be opened next Monday.

Feed Young Pigs Well.

This pays, and here is the proof. On October 8th last, a Berkshire pig two months old, and a fair average of the litter of five pigs just weaned, was taken from its companions and fed three pints of new milk per day for just three weeks, the remainder of the litter receiving what corn meal they wanted and generally getting ordinary rough treatment. At the expiration of the three weeks, this pig was put with the remainder of the litter, and all have been fed and treated precisely alike since. At the time the pig was returned to the litter, it showed a slight improvement over the rest, but since that time it has made a remarkable growth as compared with the others. On Feb. 9th this pig was weighed together with the heaviest of the pigs remaining, with the following results: The pig which had received the milk for three weeks weighed 163 pounds, the pig that had roughed it three weeks longer weighing just 113 pounds, a gain of 50 pounds from feeding 31½ quarts of milk. Again we say, it pays to feed young pigs well.—*Prof. Shelton.*

An Offer.

For the purpose of inducing Kansas teachers to determine for themselves the ability or inability of pupils to perform the elementary operations of the branches taught in the public schools, we make any one or all of the following offers:

One number of the INDUSTRIALIST free for two months to that one of your pupils who, upon fair competition with the others, shall prove to be the best speller of everyday English words,—geographical and scientific technicalities being barred.

Another number free for two months to the most accurate user of figures in addition, multiplication, subtraction and division,—arithmetical and algebraic puzzles being barred.

Another number, ditto, to the one writing the most legible and neatest hand, legibility to have the preference.

Another number, ditto, to the one who makes the best floor-plans and cross-section of your school-house, drawn upon a scale of one-eighth of an inch to the foot.

Another, ditto, to the one who writes the best "local" for the nearest newspaper, the editor to name the subject and to be the judge, and the "local" to be over one and less than two "sticks" in length.

In each case except the last, the teacher is to conduct the examination and make the decision according to his or her best judgment.

Silver in Southern Kansas.

During the past week the Chemical Department has received from various parties mineral specimens supposed to abound in gold, silver and copper,—all from a single locality in Woodson Co., Kansas. Though these specimens have been carefully assayed, in none of them has there been found any trace of the above metals,—notwithstanding the results claimed to have been obtained

by rough assays made upon the spot. The specimens are, however, very interesting from a mineralogical point of view and indicate a somewhat peculiar formation in the locality. The so-called silver-bearing ore is a cellular quartz rock, of a cherty character, containing in its cavities fine quartz crystals and also incrustations of various zeolitic minerals. The "gold" ore is a decomposing zeolitic rock containing perfect crystals of calcite and filled with minute, glittering scales of yellow mica. The "copper" ore is a fine specimen of massive phosphorite (lime phosphate), evidently of coprolitic origin.

We do not of course wish to be understood as declaring that our friends have no valuable ore in that locality, but simply that the specimens they have sent us contain no trace of precious metals. And in this connection we are quite willing to make the following offer: To make gratis a quantitative assay, for any party and at any time, of any ore containing gold, silver or copper *naturally* existing in any deposit in the State of Kansas; and in making this proposition, we expect also to have some little leisure left for other duties.—*Prof. Kedzie.*

A Contrast.

Contrast the characters of two persons in middle life, one of whom has always kept in view the duty of intellectual culture; the other has recognized no such duty, but looking for the present simply has been satisfied with mere physical enjoyment. In external surroundings there may be but little difference. Both may be poor, or each may possess a competence. In physical health and strength there may be no difference. Both may alike rejoice in a sure title to an "inheritance that faideth not away." In all these things, both may stand upon the same footing. But intellectually, what a contrast! In one there is fullness, depth; in the other, there is leanness, shallowness. One has read history, and its teachings enable him to look with quiet composure upon the excitements of elections and the excuses of party zeal. He knows that the Great Sovereign of the universe will maintain His government and provide for His people. He has learned to read from the great book of nature, spread out before him in sea and sky, in earth and air, and in all the forms of animal and vegetable life; and each day he reads therefrom some fresh paragraph, some new chapter, with ever increasing delight.

When we come to know the men, how differently do we regard them. The one has a fund of resources in himself which not only gives fullness of pleasure to his own daily life, but makes it a fountain of freshness and beauty to thirsty souls around. The one is like a tree which bears the marks of decay long before it has reached maturity; its top is scanty, many of its branches sickly; it bears no fruit; it furnishes little shade; each succeeding year its verdure diminishes; and soon it will stand a dry and leafless tree, "a cumberer of the ground." The other is like a tree, thrifty and vigorous; its umbrageous top affords a grateful shelter from the rays of the summer sun; its boughs in its season are laden with fruit; it is a thing of beauty and joy to its proud owner; for many long years will it flourish, each year sending its roots deeper, stretching its branches higher, spreading them broader, its crop of golden fruit annually increasing.—*Prof. Ward.*

Wood--Its Intrinsic and Comparative Value.

By dear-bought experience we are learning that there is an intrinsic value in wood which we never realized in our eastern

homes. We want it now as we never wanted it before. But some of us are becoming convinced that this want can be supplied in a very few years. The mass of the people are turning their thoughts to the planting of trees. We find that certain species of trees grow with great rapidity. But there are two questions that arise in this immediate connection: First, as to the intrinsic value of the species which we wish to plant; second, as to the possibility of successfully cultivating certain species. These questions are of sterling interest to the entire region reaching from the Yellowstone to the Gulf. To aid in solving these important questions, the Horticultural Department has been doing in a quiet way for several years all that the funds of the College would permit. The results already attained are of great value to the State. And the value of these experiments can be greatly enhanced in years to come with proper attention, at a small annual cost to the College, thus serving an important office in the regular instruction of the College, and at the same time conducing to one of the most important interests of the State.

For the purpose of class illustration we have been collecting specimens of Kansas-grown trees, so as to exhibit both the annual wood growth and also the character of the wood and its value for the purposes of the arts. We have just received a valuable addition to this collection, embracing ninety specimens of Michigan-grown woods, from Prof. R. F. Kedzie, of the Michigan Agricultural College. These specimens come to us in good shape, being nicely polished. They have been carefully labeled, and will be of great service in the classroom. The donor will please accept our thanks. We still need good specimens of the Kansas-grown wood for our own use and for purposes of exchange. If our friends in different parts of the State will bear this in mind and aid us in this direction, they will do a good work for the College and the State. If convenient let the specimens be ten inches long and one-half inch thick, retaining the bark when practicable.—*Prof. Gale.*

The Improvement of Common Stock.

While every year adds something to our knowledge of the agricultural resources of our young State, nothing that we have yet learned has disproved the truth taught by the buffalo and antelope that once covered these prairies; namely, that Kansas is pre-eminently a stock-growing State. On the contrary, every accession to the grain-growing area of the State has equally added to the region of profitable stock growing. If one of our new counties is blessed with a large corn crop, cattle and hogs in greater numbers than the original prairies could support are indispensable to its proper utilization. If wheat has been largely grown, both wheat growing and stock raising are made more profitable when the straw is used by one and the manure furnished to the other. Even when pork and beef are so very low as at present, corn at 18 cents and wheat at 90 cents are unquestionably lower. Stock raising is certain always to figure largely in Kansas agriculture, a fact that farmers are daily coming to appreciate. It is pleasant to notice that with the growth of this idea the kindred one that the best stock is most profitable, is becoming generally understood. It is not necessary to enter upon an argument to prove this, the fact that five years ago the pure-breed herds of the State might have been counted upon the fingers of one hand, whereas to-day there is scarcely a county in the settled portion of the State with not one or more of such herds, is evidence enough.

I desire in this article to offer a few sugges-

tions to those readers of the *Farmer* who are becoming interested in the improvement of their native herds. In the outset our improver will encounter three questions: (1) as to whether he shall employ a grade or pure-bred sire, (2) of what breed, (3) how to select the individual.

THE USE OF GRADE AND PURE-BRED SIRES.

There is often a strong temptation to purchase a perhaps good looking grade in preference to a pure-bred but no better looking and more costly animal. If our improver succumbs to this temptation, he will have been guilty of a most fatal and inexcusable blunder. I think of no one thing that has so seriously checked the improvement of our common herds as the use of grade sires. It may be argued that the mongrel is the equal individually of the pure-bred; but this is little more than an excuse. The breeding qualities of an animal depend upon its pedigree, and for the grade to produce stock equal to the pure-bred would be little less than a miracle.

At the present time there is absolutely no excuse for the use of any but pure-bred sires in our herds. Such animals may be had at the very lowest prices, costing in fact little more than the grades or natives. I am the last one to urge our farmers to go in debt for anything, but of all the appliances of the farm I think of none that will justify running in debt more than the purchase of a first-class sire. Many farmers who think it sound policy to give their note for a thresher that will not be in use two weeks of the year, look upon the payment of forty dollars extra for a pure-bred bull, that will hand down his valuable qualities to sixty calves a year, as a reckless piece of extravagance.

WHAT SHALL BE THE BREED?

This is a question which can only be answered from a full knowledge of all the circumstances of the farmer. Contrary to the general opinion, there is little if any rivalry among the breeds. Every breed has been created for some special work, and there are no circumstances of our agriculture to which some one of the breeds is not adapted. For the butter dairy, there is probably no breed superior to the Jerseys, but for the production of beef a more worthless race could hardly be imagined. Again, for a meat-making machine, what equals the Shorthorn or Hereford, and who would dare trust either for the dairy? Every improved breed possesses some one special quality, and in just so far as it is valuable for this quality, it is worthless for all others.

HOW TO SELECT THE INDIVIDUAL.

A distinguished English breeder has said of his favorite tribe, "all is waste that is not beef." If the farmer in selecting will hold steadily in mind what he wants and let everything else pass as secondary if not as "waste," except this special quality, he can hardly make a mistake in selecting his breeding animals. The greatest mistake that is now made by breeders as well as by farmers, and the one that is doing the most damage to our improved breeds, is in selecting breeding animals on account of color, shape of horns, or "markings," instead of substantial qualities like beef, milk or pork, the first consideration. It is surprising how few men are able to divest themselves of their prejudices in these unimportant details. To these men there is nothing useful or beautiful in a Shorthorn bull unless it is all covered by a red coat; and a Berkshire boar, be his form and breeding ever so good, unless he has perfect white-tipped extremities, is worse than a "scrub" in their eyes.

Let breeding animals be selected for their useful qualities and not for fancy points. Only poor men and those intending to stay so can afford the luxury of underbred scrub stock, and equally our farmers cannot afford to throw aside those sterling qualities for which the improved breeds are famous, for mere matters of fancy having no money value.—*Prof. Shelton, in Kansas Farmer.*

THE INDUSTRIALIST.

SATURDAY, MARCH 2, 1878.

Examinations were held yesterday.

The Board of Regents will meet next Tuesday.

The plows have been busy this week on fields, roads and proposed lawns.

Teachers are taking up our offer to send the INDUSTRIALIST as a prize for spelling, etc.

The bids for the erection of the new building will be opened as announced in the advertisement.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

The Murphy temperance meetings in the city have caused a postponement of the Drill Club and prayer-meeting for the last two weeks.

The Alpha Betas did not meet last Friday because it was Washington's birthday, consequently we have no report from that Society.

At the last meeting of the American Berkshire Association, held in Springfield, Ill., Prof. Shelton was elected one of the Vice-Presidents of the Society.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

State Superintendent Lemmon gave us a hasty call this week, and has promised to come again. He is punching everybody up to furnish material for an educational exhibit of Kansas at the Paris Exposition.

The Western Review of Science and Industry for February is at hand, completing the first volume. It is becoming well established, and is well edited by Hon. Theodore S. Case, Kansas City, to whom send for sample numbers.

Mr. Preston, of St. Louis, Prof. Bagley, of Pittsburgh, and George Tyler, of Newton, Harvey county, spent a portion of Tuesday afternoon in strolling over the College grounds and looking through the different buildings.

Oh, my! Just look at that new heading! Somebody fan us—gently. The design was executed by the Johnson Type Foundry. We call the attention of the *Champion* to the splendid growth of trees since our last cut was made. It has been a fine year for trees!

George Wake has again returned to Manhattan. For some months past, he has been teaching with good success in Williamsburg, Franklin county. As he cautiously wends his way back into Manhattan society, the girls send up a shout of joy and the boys quietly but firmly threaten vengeance. And all this comes as a result of the luxuriant beard which George has grown. Boys, go and do likewise.

Hon. Alfred Gray, which the same has had about as large an experience in "diagrams," "engravings," etc., as any man in the State, writes thusly and correctly about our barn cuts of last week: "Mr. Stewart is entitled to great credit for that job. It is the best piece of accommodation rule-work to which I have had my attention called, and reflects credit upon the Printing Department of the College."

Last night came the Report of the State Board of Agriculture. We haven't had time to examine it yet, but a glance shows that it is like its predecessors in always being an improvement upon all other reports. Gray is a genius, and may the Lord bless him with long life and facilities for publishing better things about Kansas, in a better way, than can be truthfully said of any other State.

The most serious obstacle to the more general seeding of our prairies with the tame grasses has been the great cost of seed. This objection farmers always urge, and generally it is a valid one. But the present season furnishes no such excuse, seed from first hands being unusually cheap. The College farm has just received a choice lot of orchard-grass and Kentucky blue-grass seed, the former at one dollar and the latter at ninety cents per bushel.

The numerous stakes marking the experimental plots in the wheat field west of the College building elicit frequent enquiries as to their use and object. This experiment is for the purpose of testing different fertilizers—plaster, ashes, farm-

yard manure, etc.—upon wheat and different varieties of wheat, among which are the celebrated new sorts, Arnold's Gold Medal, Silver Chaff, and Golden Straw. The whole experiment is a continuation with some variations of the experiments of 1876 which attracted such wide attention.

The temperance meetings which have been going on in Manhattan for the last ten days were brought to a close last night. They have been attended with greater success than the most sanguine dared to hope for. Nearly 1,800 persons have signed the Murphy card and put on the blue ribbon. A fair percentage of this number were drinking men, and we earnestly hope that they may succeed in keeping the vow which they have taken upon themselves. In order that this may be accomplished, however, these men must not be abandoned, now that these meetings have terminated; but some means must be devised whereby they may be lifted up to a higher plane of social life, be constrained to forsake the sink-holes of vice and their evil associations and surround themselves by such a moral atmosphere that the fumes of the grog-shop and the enticing voice of the tempter cannot overcome them. Mr. Reynolds is a very effective temperance worker, and deserves all the praise which the Manhattan people ascribe him. He goes to Salina to-day to inaugurate another campaign.

The Websters met as usual on last Saturday evening. Some of the debaters being absent, that order was passed over. Under extempore speaking, a lively discussion sprang up on the subject of temperance. Some of the members, notably Godfrey and Anderson, claimed that a pledge was neither necessary nor important to total abstinence. Others, among whom Bell was most prominent, held and argued that the best way to reform a drunkard was to cause him to sign the pledge. Thomen gave us a declamation; Mason read an essay on temperance; and Lundberg read a selected article on the subject of beauty.

Under the head of unfinished business, the subject of a moot-court was reconsidered, and it was decided to postpone it indefinitely. The regular order of exercises may be expected next Saturday night. The question and debaters of this evening were continued; A. F. Dickson was appointed for declamation; Todd for essay; Wylie for select reading. The attendance was not as large as could be wished. Members are urged to attend more regularly. You will always be interested.

REPORTER.

FROM NEW MEXICO.

Old students especially will read with pleasure the following extract from a private letter from J. F. LaTourrette, Fort Union, New Mexico:

New Mexico is not such a bad place to be in after all; for a man can live and be happy here as well as in any other place. I have been running around the country a good deal, and the more I see of it the better I like it. Fort Union is very pleasantly situated in a valley formed by high ranges of hills on the east and west. Those on the east are designated as the "Turkey mountains," but are "hills" in comparison with the old grey-headed timers that loom up far above the horizon on the north and west. A trip of about forty miles southeast from here would prove that we are situated on an elevated table-land; for after traveling over the prairie you suddenly find yourself at the edge of a "jump off" of about 1,500 feet. At this place the climate rapidly changes from the cool air of the mountains to the warm air from the plains, over which the eye can reach for an extent of two hundred miles. The majority of the inhabitants are Mexicans, and I can safely say that not one out of fifty would know his own name if he should see it written on paper. The small-pox has been raging here, chiefly among the Mexicans, and it is estimated that 8,000 have died of this disease.

I have taken several pleasure trips into the mountains since I have been here. My first was a fishing excursion. We went about forty miles from here, camped late in the evening, and the next morning found ourselves within half a mile of a large Indian camp. We broke camp after breakfast! Three bears were killed a few hours after, just where we had camped. I caught over a hundred trout in two days, sprained my ankle, and returned home. The second trip was a hunting excursion. Two other young fellows and I took a tent and wagon and went about forty miles in another direction. Result—14 ducks, 18 squirrels, 2 wild turkeys, a large wild cat and two fine black-tail bucks, one of which I had the honor of killing. I have since killed a large buck within six miles of the post.

About a month ago, I took a trip to Colorado, and have just returned from Cimarron City, which place is noted for being a "hard town." I saw enough to convince me that it deserves its name. The dining-room of the house where I stopped was connected by large folding doors with a huge bar and billiard-room. Both rooms are a sight worth seeing—bullet holes in every direction. How many men have been killed in that place I cannot say. I know of seven.

Am very glad to hear through the INDUSTRIALIST that the College prayer-meeting is so well attended. Hope it is as successful as when I was there. Had a letter from Will Burnham yesterday, in which he tells me about the prayer-meeting at West Point. He is doing well, as I knew he would.

We were very glad to hear from you, Freeland. Hope you will send us some letters for the INDUSTRIALIST, and thereby not make it necessary for us to steal extracts from a private letter not intended for publication. The students would be greatly interested in short recitals of your experiences on the frontier.

ENTERPRISE ITEMS.

E. B. Purcell shipped eleven cars of cattle and hogs yesterday.

The K. P. Railroad has enclosed a park at the depot, and will probably erect a fountain therein and plant with flowers, trees, shrubbery, etc.

A hunter brought in a black wolf scalp with lop ears the other day, and after making affidavit secured the bounty. It is the first lop-eared black wolf ever heard of in this country.

NATIONALIST ITEMS.

The Horticultural Department has started the plow.

Hot-beds are made, and early spring vegetables are being planted, on the Hill.

Plowing, cutting stalks, and general spring work has commenced upon the farm.

Leslie Smith came down from his school near Ogden, last Saturday. He still hankers after the Manhattan girls.

Twelve car loads of immigrants went west last Thursday night. It was one of the handsomest trains we ever saw.

A few days ago, Wm. Condray brought down 1,552 rabbit scalps from Randolph, the bounty on which amounted to \$84.70.

The Seniors are beginning to search around for suitable themes for "that oration." Pass in your hints and advice before they "go to press."

Prof. Kedzie is arranging his cabinet of mineral and geological specimens. They will be so classified that he can place his hand upon any specimen desired.

Crowds of people who attended the Old Settlers' Reunion on Friday, from a distance, visited Mt. Prospect and Bluemont, to take a good look at Manhattan and up and down the Blue and Kansas valleys.

Prof. Walter's classes in drawing are making good progress, especially the class in geometrical construction. In a few days a class in topographical drawing will be started for the benefit of those students who are in the surveying class.

Miss Etta Thompson left Monday last for Manhattan, to pursue her studies in the Agricultural College.—*Irving Gazette*.

We are pleased to acknowledge the receipt of the INDUSTRIALIST, and cheerfully place it upon our exchange list. From it we learn the Agricultural College, under management of Pres. Anderson, is in a prosperous condition.—*Neosho Falls School Review*.

T. C. Henry, Esq., of Abilene, Dickinson county, Kansas, dropped in at our office on Thursday last and spent a considerable part of the day with us. We were delighted to meet a gentleman possessing such an accurate knowledge of a section to which so many of our people have gone and so many more are going, and regret that Mr. Henry could not stay here long enough to enable a large number of our citizens to become personally acquainted with him. He is located in one of the best sections of Kansas, and as he deals in land we advise all who think of going there to communicate with him. We had a long talk with him, and were much interested in what he said about the country beyond the Missouri.—*Valley Spirit, Chambersburg, Penn.*

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading, arithmetic, through decimal fractions, and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not

place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employe instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shop to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

TO BUILDERS.

Sealed proposals for the erection of a building for the Kansas State Agricultural College (estimated cost about \$12,000) will be received by the undersigned until seven o'clock P. M., on Tuesday, March the 4th, 1878. Plans and specifications can be seen after February 1st at my office in Manhattan, and at the office of E. T. Carr, architect, Leavenworth, Kansas. Bids will not be considered unless guaranteed by parties of known responsibility. The right is reserved to reject any or all bids.

N. A. ADAMS, Secretary.

Manhattan, Kan., Jan. 15th, 1878.

MANHATTAN, KAN.

MANHATTAN,

THE INDUSTRIALIST.

SATURDAY, MARCH 2, 1878.

The Press on the Agricultural College.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST'S" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

Is a credit to any State. Its facilities and courses are sufficient for furnishing an education equal to any of the eastern States.—*Cherry Vale Leader*.

No better opportunity for youths who are possessed of limited means to obtain the higher branches of a practical education.—*Eldorado Press*. The equal of any school in the land, and vastly superior, in many respects, to any in the West. Students of limited means especially will find advantages at this College not to be found elsewhere.—*Washington Republican*.

If you desire to give your children a practical education, one which will qualify them to fight the battle of life successfully, you cannot find an institution in the country better adapted to the purpose.—*Wyandotte Herald*.

This institution is one of great merit, and its work of usefulness is hardly exceeded by any other institution in the State. Its course of instruction embraces the every-day practical branches.—*Peabody Gazette*.

This is the only school in the State, which teaches practical education,—work on the farm, in the orchard, in the shop, and in the store. All branches of education are taught by the most experienced teachers.—*North Topeka Times*.

Is doing a good work for the State, and as the tuition is free, there is no reason why every person who may wish for practical instruction should not avail himself of the liberal provisions made by the State at this College.—*Lyons Bulletin*.

The INDUSTRIALIST is the best testimony that could be offered establishing the thoroughness of the instruction afforded in the industrial school. The State Agricultural College is winning a deservedly high reputation.—*Atchison Champion*.

Its work is eminently practical and remarkably thorough. It prepares the young for the duties and responsibilities of active, every-day life, and besides this affords every facility for education in the higher branches of study.—*Chetopa Advance*.

It is the best school in the State to secure a practical education, one that will be useful to a boy or girl, no matter what vocation he or she may follow. Its course is particularly adapted for farmers' sons and daughters.—*Chase County Leader*.

This College is probably the best educational institution in the State. The necessity for good farmers and more of them is very apparent. Farming requires a practical education. It has been reduced to a science and is now taught.—*Topeka Blade*.

This is probably the best educational institution in the State, combining as it does practice with theory in the every-day routine of study. Scores of young men and women from this county ought to avail themselves of its advantages.—*Ottawa Journal and Triumph*.

Will prove a lasting honor and benefit to the State of Kansas. The College is yearly growing in favor throughout the State and should more than any other State institution receive the patronage and support of farmers and those interested in agricultural pursuits.—*Eureka Herald*.

This institution is rapidly taking rank as the foremost College in the State. Its able corps of teachers are vigilant and active, and the rapid progress which has been made under their management is the best proof of the future prosperity of the school.—*Great Bend Tribune*.

Stands at the head of the educational institutions of the West, and is one of the things of which Kansas may well be proud. If its advantages were more universally appreciated, its walls would be filled with young men and women from all over the State.—*Burlington Independent*.

While in Manhattan, in June, we looked over the College grounds and into the faces of some of the Faculty. We have the testimony of students who have been there under instruction. The State is safe in offering its best material to the hand of training and instruction there.—*Valley Falls New Era*.

There are at least fifty young farmers and mechanics in Douglas county who might profitably spend the fall and winter months at the Agricultural College. The State has provided a splendid school there especially for the industrial classes. It will be their own fault if they do not enjoy its advantages.—*Lawrence Journal*.

Both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.—*Blue Rapids Times*.

There is always a good situation at hand for the young man or woman who thoroughly understands how to do something that the world wants done. We advise all who are anxious to thoroughly prepare themselves for the earnest duties of the farm, shop or store to attend the Kansas State Agricultural College.—*Osage County Chronicle*.

One of the great institutions of the State, and the poor man's college. Here may be obtained a thorough and PRACTICAL education—a knowledge of the every-day duties of life in its many phases—at a minimum expenditure of money; a knowledge that will be called into play in every business relation of life.—*Russell County Record*.

This first-class institution is known throughout the United States for its extraordinary facilities of educating those who patronize it. We are well acquainted with several parties, both male and female, who are attending this College, and they seem determined to remain there until they have completed their education.—*Howard City Courant*.

Has become just what it was intended to be—a College for the people. It is an institution that the people of Kansas are proud of, and can rightfully boast that it is, if not the best, among the best of the kind in the United States. It is doing just what Congress intended should be done when the appropriations for such Colleges were made.—*Topeka Commonwealth*.

During that time there were seven students from New York, two from New Mexico, one from Illinois, two from Indiana, two from the Indian Territory, and one from Colorado. Sedgwick county, in the mean time, has only had four students. It would seem from this that the importance of the College as an educational institution is not appreciated by our citizens as it should be.—*Wichita Beacon*.

Offers superior advantages for affording to the youths of Kansas a practical education, one that can be put to use anywhere and every day in the week, and applied in the affairs of every-day life. Each pupil is required to choose some trade, and in that trade he receives special training by a competent instructor, while he also pursues a theoretical course. Thus the hands and the brains are being educated at the same time.—*Neosho County Record*.

There are hundreds of young men in Kansas who want a practical education, such an one as will enable them to make a living as farmers, mechanics or business men; but are prevented from obtaining it by the poverty of their parents or by their own lack of funds. The work given to the students by the Agricultural College at Manhattan, will enable those who are in earnest to earn enough money to defray the greater part, if not the whole, of their expenses.—*Neosho Falls Post*.

Mechanical Department.—Regular instruction and practice in Carpentry, Cabinet-Making, Turning, Scroll-Sawing, Wagon-Making, Blacksmithing and Painting.

Dress-Making and Millinery.—Daily instruction and drill in hand and machine sewing; cutting, fitting and making dresses; and all branches of millinery, by a practical teacher.

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufactory of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

Agricultural College Lands.—These lands are in the market, as provided by law, and for sale for one-eighth cash, balance in seven equal annual payments with ten per cent interest, payable annually. The lands are all choice selections, and prices range generally from \$5.00 to \$6.25 per acre. Some of the best tracts are appraised at from \$8 to \$10 per acre, and they are well worth the money. These lands are located in Washington, Marshall, Clay, Riley and Dickinson counties. For particulars, maps and descriptions, address L. R. Elliott, Agent, Manhattan, Kas.

A Kansan Abroad, By NOBLE L. PRENTIS. In this volume Mr. Prentis has collected his letters first published in the *Commonwealth*, under the title of "PRENTIS IN EUROPE;" "PIKE OF PIKE'S PEAK," the interesting address originally delivered under the auspices of the Kansas State Historical Society, and never before printed; and "THE WORLD A SCHOOL," the annual address before the State Agricultural College, delivered May 25, 1875. One volume, 12mo., of 225 pages, tinted paper, full muslin binding embellished after design by Henry Worrall. Price, by mail, \$1.25. Address GEORGE W. MARTIN, Publisher, Topeka, Kansas.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

"It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact."

In two parts: Part First—Elementary Geology; Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas.

Gardening for Profit.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

Educational Calendar.—A wide-awake, spicy, newsy, Kansas paper for the Officers, Teachers and Patrons of Kansas schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the *INDUSTRIALIST*. Geo. W. Martin, Topeka.

The Western Review of Science and Industry.—A monthly record of progress in Science, Mechanic Arts and Agriculture. Sixty-four pages octavo. \$2.50 per annum, post paid. Single numbers, 25 cents. Edited by Theo. S. Case, Kansas City, Mo.

This journal has received the warm approval of most of the scientific periodicals of the country, such as *Popular Science Monthly*, *Harper's Weekly*, *New Remedies*, *American Naturalist*, *Science Observer*, &c., &c., and numbers among its contributors some of the most earnest and capable workers in the West, viz: Prof. G. C. Broadhead, State Geologist of Missouri; Prof. B. F. Mudge, State Geologist of Kansas; W. K. Kedzie, Prof. of Chemistry, State Agricultural College, Kansas; Prof. E. L. Bertroud, of the School of Mines, Colorado; nearly all of the members of the Kansas City Academy of Science, and many other well-known writers on scientific subjects.

The articles selected for its pages are taken from the very best periodicals of this country and Europe, and are chosen principally with reference to their reliability and their adaptiveness to the popular taste.

Being the only journal of the kind in the West, it should receive the patronage and scientific contributions of western men at least, the assurance of the Editor being pledged that as rapidly as the support given him will permit, he will enlarge the REVIEW and add to its attractiveness and usefulness by suitable illustrations, and in every other manner possible.

33-4w

KANSAS STATE AGRICULTURAL COLLEGE.

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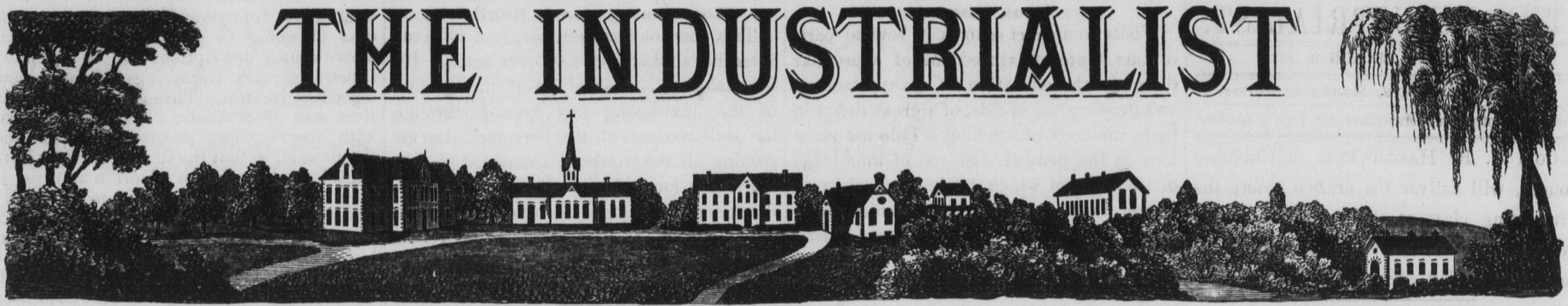
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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COUR

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, MARCH 9, 1878.

No. 47.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE
KANSAS STATE AGRICULTURAL COLLEGE.

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Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	
Teachers.....	1.13-- 1.13
Professional education:	
Ministers.....	0.43
Lawyers.....	0.55
Doctors.....	0.73-- 1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51-- 97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

Evolution Discussed--The Light Shed by Geology.

[A lecture delivered before the Academy of Science, New York City, by Professor J. S. Newberry, of the Columbia College School of Mines.]

So much has been said and written in the last ten years about evolution, that it may seem presumptuous in me to attempt to throw any new light on the subject in a single lecture. All those who have discussed it have not been in accord upon it, and strongly opposed parties have been called into existence, and, as usually happens, the more the discussion is prolonged, the wider becomes the divergence of opinion. But most men and all women are partisans, and one of the most difficult things encountered in human experience is to make all think alike on any proposed question.

Four parties are arrayed in antagonism upon the subject of evolution, and are carrying on a kind of quadrangular duel. The first party is that represented by the distinguished scientist, Mr. Darwin, whose name has been so identified with the theory of evolution that the impression widely prevails that he is the author of it, whereas it was originated long before his time. But he formulated and explained it. Mr. Darwin's view is that all the complex and symmetrical forms of the fauna and flora, the animal and plant of the present day, are derived from simple initial organic points—a cell for example, by a process of growth, with infinite variation, and that those varieties which were best adapted to their surroundings were perpetuated and strengthened, while the ill-adapted perished in the struggle of life. This is the doctrine of the survival of the fittest. If, in the language of Mr. Darwin, a region was occupied by extremely prolific but swift hares, and by dogs or wolves dependent on the capture of these hares for their existence, naturally the longest-legged and fleetest dogs or wolves would be the most successful in the chase, and in competition with others would be perpetuated, while the shorter-legged and slower dogs would be starved out and disappear. The result would be the production of a race of greyhounds, if you please. Mr. Darwin leaves the question of the origin of life untouched.

Another class of philosophers, among whom Dr. Charlton Bastian is a leader, goes a step further back, and claims that the initial point in the life series, developed according to the Darwinian hypothesis, is a life germ produced from inorganic substances. Of this class are the materialists or Abiogenesists; while Huxley, Darwin, and the most distinguished of modern biologists are Biogenesists; that is, they disclaim any knowledge or comprehension of life, except as the progeny of pre-existent life.

Another group of thinkers of which Professor Asa Gray is a type, accepts the theory of evolution as an explanation of the method by which an inscrutable power has produced all the phenomena of creation. Its adherents see in the theory nothing inconsistent with the existence of a Supreme Deity or with Revelation.

Still another class is that of which my distinguished and excellent friend, Professor Dawson, of Montreal, is a champion, and which rejects all forms of evolution as inconsistent alike with Revelation and true science. My desire is to give a brief summary of the facts—things altogether too much neglected in this discussion—which geology offers to the sincere inquirer after light on this subject, and not to advocate this or that theory.

In past ages a series of rock formations have been made which inclose relics of animals and plants that lived in former times. These series of rocks contain a more or less complete history of the changes which took

place on the earth's surface through millions of years anterior to the advent of man. The fossils of the Palaeozoic and Mesozoic ages are about all extinct. It is only when we come to the tertiary or Neozoic age that we meet with living forms. What we call our *terra firma* is really a type of instability, for under the constantly acting process of contraction, the crust of the earth is constantly being moved and folded, and that somewhat irregularly, so that in all ages some portion of the land has been going up, other portions down; wherever the surface passed below the sea level the water would flow in and deposit upon it one or another of the kinds of sediment which we find in the series of rocks. Sediments are still forming from the shells and skeletons of animals which inhabit the sea, and which in death sink to the bottom. In each age there has been a subsidence of the land, which has permitted the sea to flow in and deposit over the submerged surface sediments which contain in greater or less numbers the remains of animals and plants then living. This rock history is incomplete because not all the forms of life which existed would be preserved, partly because many were perishable, and chiefly those that inhabited seas or were drifted into them would leave any relics behind them. This history, though more complete than would at first be deemed possible, is confessedly defective, and has been, I must say, but impartially read. Great areas of the world's surface have yet been unstudied by geologists. While the subject is to be greatly illuminated by future discovery, there is very little probability that the general conclusions of paleontology will experience any modification.

Mammals began their existence, so far as we know, in the Trias, but throughout the Mesozoic ages held an altogether subordinate and insignificant position. The reptiles occupied the sea, the land and the air, for they were swimmers and walkers and flyers; the sea reptiles resembling the whales, as we know them, and the sea serpents, as we imagine them to exist at present. The first bird, so far as yet known, was the *Archaeopteryx*, found in the lithographic slates of Solenhofen, Bavaria. Part

reptile and part bird in anatomical structure, it was apparently clothed with feathers, but the wings were short and composed of plumes arranged radiately, as in a fan, while the tail, a prolongation of the vertebral column, had the shape of an oar-blade. It is supposed that it had teeth. The flying dragon, or *Pterodactyls*, of the Jurassic and Cretaceous periods, had great wings, like a bat's in structure, and measured as much as twenty-five feet from tip to tip of their wings. In the Tertiary period, the vegetation was apparently more luxuriant and beautiful than that of the present day, for the grandest and most interesting of our forest trees, the great Sequoias of California, the redwood and the mammoth trees, our tulip trees, magnolias, sycamores and cypresses are the lingering remnants of the magnificent forests which covered our continent even to the Arctic Sea.

The Tertiary has been well named the age of mammals. Brute force then ruled the world; for man, its present master, had not yet appeared on the stage. During the ice period, the climate of Greenland was brought as far south as New York, and broken sheets of ice held all nature in the embrace of death for thousands of years. Whole races of animals and plants perished, but those forms that were driven far south survived, and ultimately moved northward with the amelioration of the climate, and were attended by a new element in the history of the world, primitive man.

We see that the geological record, so far as it goes, is more authentic and credible

than any uninspired history, since it contains no personal equation, is the product of no prejudice, passion, or partial view, which color all human histories, but is automatic and necessarily true; that the earlier chapters of this history, those which contain the records of the beginning of life, are for the most part obliterated and illegible; that there are many gaps in the narrative which doubtless will be, but up to the present time have not been filled; and thus that the record consists of a series of chapters, more or less disconnected. The evidence is conclusive that the earliest fauna and flora of which we have any knowledge consisted of fewer elements, and these of simpler structure than in any succeeding age. Also that there has been a constant and progressive increase in the variety of animals and plants and in the complexity of their structure. This progress of life is so evident and general that we cannot resist the conclusion that it is the expression of law; in other words, that it is the operation of forces as distinctively determinative as those which produce and guide the motions of the heavenly bodies. The parallelism of the progress of life through the geological ages with that of the growth of an individual from a germ, is so close that most students of paleontology are inspired with the conviction that the life forms of the different ages are linked in a connected chain; in other words, that the later forms are derivations from those which preceded them. This is evolution, and therefore most geologists are evolutionists, and they believe that evolution is not only exemplified in the progress of life, but that it is a law of nature.

We now come to the question of questions: What is the cause which has produced the progress of life? One group of geologists, with Mr. Darwin, believe that external influences have alone produced the diversity of animals and plants. Another group believes that the influence which has produced these effects has emanated from within the organism, and has been an essential feature in its life and growth. External circumstances have a most potent influence, as Mr. Darwin has shown, but we may question the adequacy of the agencies he invokes to produce all the effects he claims for them. There are many facts which it is impossible with our present lights to reconcile with his theory.

I will present some of the difficulties which, up to the present time, have prevented me from accepting, in all its length and breadth, Darwinism as the theory of the universe, and have compelled me to hold the law of evolution, not as a creed, but as a conviction. There is first the breaks in the chain of life, which, till they are filled, forbid the cautious scientist to accept as demonstrated the derivation of the later forms, in all cases, from the earlier. Professor Huxley explains the persistent types of life by saying that if the spontaneous variation of a species does not give it an advantageous form or structure, that variety has not been perpetuated, or no profitable variation has been hit upon. To my mind, this explanation is inadequate, because I cannot conceive that a highly organized animal with complicated structure like the nautilus should pass through all the revolutions of the globe without being more affected than it has been by external circumstances, unless the life that inspired was more potent than all surroundings and gave it independence of circumstance. The Latin proverb says, "Those change their skies, but not their souls, who cross the sea." That external circumstances alone could produce such a symmetrical and continuous development of organic forms, is something that with our present knowledge seems to me highly im-

[Concluded on fourth page.]

THE INDUSTRIALIST.

SATURDAY, MARCH 9, 1878.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

COL. J. R. HALLOWELL, of Cherokee county, will deliver the oration before the graduating class at the next Commencement exercises of the Agricultural College, Wednesday evening, May 22d, 1878.

Sense versus Nonsense.

The world is so full of genuine women, guided by the noblest principles, and evincing an almost desperate eagerness to earn an honorable living for themselves, parents or little ones, that the necessity for an education different in this respect from that usually given to girls must be apparent to all. If viewed from the standpoint of actual instead of ideal life, the course of study followed in the average female seminary will logically appear as a standing wonder. It has been so long in use that the principle upon which it was built, and the end it was designed to attain, may fairly be inferred from the results actually produced. Apart from an effort to discipline the mind, which can be as well done by the acquisition of useful as of useless knowledge, its chief purpose seems to be that of furnishing intelligent playthings for men possessing exhaustless wealth. Judged by its fruits, it evidently assumes that a woman's work mainly consists in discussing literature, smattering French, executing operettas, and attempting to copy paintings without a knowledge of drawing. It assumes that the girl will not marry; or, if she does, that the strain of maternity will not test her constitution; that her children will never be sick; that her family will be oblivious to bad bread, worse coffee, and household confusion; that a flowerless garden will fill her husband with bliss, and a buttonless shirt with ecstasy; and, above all, that she will never, through any adversities, or under any conceivable circumstances, be required to perform any possible kind of work!

The world for which it prepares her is Dreamland, where the poetic Charles Augustus awaits her arrival, that they may sail in a fairy ship over a placid ocean to his castle in Spain, and spend a perpetual youth in delicious wooing, while the ceaseless moonlight sifts through overhanging leaves and exotic flowers perfume the air. Charles Augustus is a fraud! His true name is John Smith. He lives in Kansas and earns every cent by hard labor. He tears his clothes, snores, and eats unlimited quantities of pork and cabbage, which Mrs. John Smith may have to cook, and, at the same time, preserve order among an assorted lot of little Smiths, energetic with mischief and having capacious lungs and elastic stomachs.

It is not strange that the seminaries provide the usual course of study, for, like other merchants, they only supply the article demanded by the market. But it is strange that a mother who was herself so educated, and who, as a wife and housekeeper, has keenly felt her own ignorance of subjects that should have been taught, and her want of skill that might have been acquired, can be content to give her daughter the same unreal preparation for that which she knows to be very real life. And it is exceedingly strange that fathers, long familiar with the distress suddenly wrought by financial changes, should religiously exclude from the daughter's education all knowledge of business, and every possibility of earning a woman's living except by the wash-tub, needle or piano.

Look There!

Visits to district schools in several parts of our State convinced me of a peculiar defect in the education of many teachers, and growing out of this, of a great defect in their methods of teaching. I do not refer here to the general standard of knowledge of teachers, of which lately so much complaint has been made by chronic reform heroes of all stamps. I speak of one particular defect only, a defect found often where expected least—the utter inability of most teachers to draw even the most simple object on the blackboard. The result of this is an entire absence of the graphic demonstration so necessary in treating certain subjects with the classes. I will give here a few illustrations of what I mean.

In one of the schools visited, a pupil asked the teacher the difference between a harp and a lyre. The teacher answered that the lyre had several strings and the harp a great many; that the lyre was a symbol of music and so the harp; and that the lyre had the form of an arc turning both ends up, and the harp that of a triangle. This, however, did not satisfy the pupil, who had in his mind an instrument similar to the Jew's-harp so well known to him; and so the teacher went on with his description—a regular wishy-washy one, at the end of which the pupil did not know whether the object in question looked like a hot-air balloon or a hand-organ. How much better for both if the teacher had drawn on the blackboard behind him a hasty sketch of the two, and then said, "Look there."

In another school a class read a piece of poetry on the subject, "The Palm Tree." Unfortunately for them, there was no illustration of it in their "readers," and the teacher labored in vain to give them in words an idea of the majestic king of southern vegetation. But a new idea seemed to dawn upon his mind when I furnished the required illustration with a few bold strokes on the blackboard—this in much shorter time than he expended in talking to no purpose.

In another school I found a teacher laboring with a class on the measurement of triangles; and, impossible as it may seem, he did it all in words—words, and not a single line. I felt much like interrupting him by calling for a dose of parallelograms on the board, spiced by bold, strong diagonals. How he labored! The poor disciple of Pestalozzi. It was a comic and yet a pitiful sight. It reminded me of a lot of men carrying bricks for a brick-layer up into the fifth story of a new building, a powerful engine standing in the back yard unused because the men did not know how to operate it.

The two words "look there" are often more valuable than hours of lecture. Of course it is better to show the object itself to the pupil. No drawing can supplant the effect produced by the exhibition of and experiment with the object; but we must remember that the school cabinet of our age rarely has greater capacities than a large store-box. The next thing after the object is its picture, and the cheapest way to produce it is in letting a ready hand, a good eye, a piece of chalk, and a blackboard co-operate in a proper manner. From the drawing, the pupil takes into his mind form and meaning which no words could give him. Education by eye is more fertile every time than education by ear.

Long ago said that veteran educator of ours, Horace Mann: "What is seen is best understood; what is understood interests; what interests is best remembered. Illustration is therefore the basis of successful teaching."—J. D. Walters.

How Shall I Teach English?

This question has been revolved in many a teacher's mind over and over again. He has taken his classes over the ground of the text-book; has passed through the dull routine of the long formulas for parsing all the words in a sentence according to the method prescribed by Brown or Clarke or Kearn, or some other of the hundred and one authors on English; yet he feels unsatisfied. When his pupils are desired to express on paper their thoughts upon some topic, it is a great bugbear to them; and when attempted, the teacher finds the penmanship poor, the spelling worse, and gross violations of the most common rules which his pupils have recited from the book.

Now, what is the object at which we aim in the study of English grammar? Is it simply to parse the words of a sentence according to a certain formula, or is it to obtain skill in the use of words in order to convey accurately, clearly and agreeably our ideas to others? Why, evidently the latter; for to what earthly use can the former be put, only in so far as it is an aid to the latter? While it is true that a proper conception of the sentence—the elements which enter into its composition, the arrangement and relation which they sustain to each other—is necessary, yet is it not true that much greater skill in the use of words may be reached by spending a large portion of the time in the actual practice of its use.

Pupils should be drilled, first, to have thoughts about an object or topic that may be presented to them; and, second, to express those thoughts readily, clearly, and in a manner corresponding to the best usage of the day. Place an object before the class and ask them to write a description of it and to tell of its composition, its properties and its uses; or show them a picture and ask them to write what they see in the picture and what they think about it; or present to them some topic that is quite within the scope of their thought and request them to write their thoughts upon it. This being done within a limited portion of time, let the papers be exchanged, and give each one ample time to correct all the mistakes of his neighbor, marking every misspelled word, every want of or wrong use of a capital letter, and every violation of good usage in the construction of sentences, giving attention also to punctuation and a choice of language to express the same idea. Here the text-book and the dictionary will be brought largely into use for the purpose of deciding cases where there is difference of opinion. Let the teacher then call the attention of the class to errors that have been overlooked by the pupils, and thus lead them on gradually to a higher plane of criticism.

If a recitation be conducted on some plan similar to that mentioned, it will be found that the pupils are really acquiring skill in handling words as a medium for conveying thought, while at the same time they are learning to have some thoughts to convey; and instead of the study being dry, dull, and almost dead, it will have a life, a vigor, an animation, an interest that was little dreamed of under the old method of parsing. Do not follow any one plan until it becomes monotonous or tedious, but give sufficient variety to maintain an interest on the part of the class. We want to see neat penmanship, correct spelling, capitalization and punctuation. We want to see strong, earnest and correct thought, expressed clearly, agreeably, and according to established usage. Let us keep these objective points before us in our efforts to teach the English language.—Prof. Platt.

Circular from the State Board of Agriculture.

TOPEKA, KAN., October, 1878.

SIR: The Legislature of 1877 provided for a Biennial Report of the State Board of Agriculture for the years 1877-8. Plans have been adopted for the same. One feature will be an accurate and minute description of each county, by townships and cities as far as practicable, showing its progress in the various industries, schools, churches,

wealth, etc., from the first settlement to the date of going to press with the Report. These county descriptions will be profusely illustrated with engravings of prominent objects of interest. Through these descriptions and illustrations we hope to mirror with accuracy and precision the past and the present, so that the immigrant may have a guide, and the future historian an array of facts and incidents, relating to the early settlement of the several counties, many of which will be buried in oblivion unless collected and put in tangible form while the first settlers remain to give personal recollections. Where county histories have been written, in most cases it is probable that they will furnish largely the required data.

For exhibition at Philadelphia, the State Board of Centennial Managers had drawn on canvas an elegant map of the State, 13 by 24 feet. This map is now placed on the east wall of the Agricultural Room in the Capitol Building, with a receding stand in front filled with glass jars containing grains, etc., etc. The rooms are thronged from day to day with strangers who examine carefully this map, together with the products from the various counties, and such statistics as we have to furnish. Armed in this manner, they radiate from this point to the various portions of the State, and in many cases they are induced to locate and make investments in real estate and securities by reason of the information thus obtained. This map is in black, with counties indicated in colors. Additions in red, from year to year, will be made, thus showing in black the status of the State at the commencement of the Centennial year, and subsequent progress in red. A more important record for each county and the State could not well be imagined, unless it be that indicated on the State and county map, which will continue to be important features of the State Report. * * *

We wish to bring data down to the present time. * * * These additions, as in the case of the Centennial map, will be made in red, so as to show the condition or status of each county in black, at the commencement of 1876, and the subsequent advance and improvement in red. We intend that these maps shall not be excelled for elaborateness, elegance and accuracy. * * *

An earnest appeal is made to the citizens of the respective counties of the State to co-operate with this office in procuring the information sought. Once obtained, an annual exhibit of progress will only be necessary to continue the story. For future reference and comparison, this information will be invaluable. No county can afford to be a missing link in this important chain of progressive events.

There are several methods by which valuable assistance can be rendered by the citizens of counties: *First*, By organizing an executive county committee, who shall appoint sub-committees from their own number or otherwise, the appointments to be made in view of the peculiar fitness of the appointees for obtaining the various kinds of information required; reports to be made from time to time until the entire county shall have been canvassed. *Second*, By a county executive committee, who shall perfect sub-committees or organizations by civil townships. It is quite probable that in many counties it will be advisable for two or three *live* persons to take hold of the matter and make it a *business* to do that which might be neglected if entrusted to committees. Pioneer or old settlers' societies would doubtless collect much valuable information. In some counties, boards of county commissioners may give aid and encouragement to the work. Other methods suggest themselves which may be better than those named. * * *

We are not unmindful of the amount of difficult gratuitous labor incident to this work. The assessors are paid for their official duties, but we have found by experience that the kind of information asked for herein is impracticable to obtain through the assessors. Their double duties of filling statistical blanks and making assessments of real and personal property, preclude details of this kind.

The appropriation for the publication of said Report is ample to make it creditable to the State. With the encouragement and co-operation asked for, together with average years of plenty during 1877-8, if the Report shall fall short of reasonable expectation the fault will be ours.

Very respectfully,
ALFRED GRAY, Secretary.

THE INDUSTRIALIST.

SATURDAY, MARCH 9, 1878.

May be this isn't spring, but it looks very much like spring.

The Garnett *Plaindealer* comes to us as a daily, the South Kansas Conference being in session. Business.

The evergreens are taking on a deep green tint that is as pleasant as—as—fill it up to suit yourself.

We call attention to the advertisement in another column of stock for sale by the Farm Department.

D. W. Wilson, of Solomon City, is spending a few days with his son and daughter, who are here attending College.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

We have been so busy this week that several millions of items which might have been thought of haven't been thought of, much less written up.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Col. J. R. Hallowell, of Cherokee county, will deliver the oration at the next commencement.

He was chosen orator for last year, but was prevented from acting as such by the death of his father. The Board have invited him to deliver the oration this year, and he has accepted. The address can't be anything else than first-class, coming from such a speaker.

The following from Mr. T. Hughes, editor of the Marysville *News*, speaks for itself, and explains any lack of reading matter heretofore. Glad to get the *News*: "Heavens! Haven't you been getting the *News*? Where did you get your selections, miscellany, etc., for the past few months? Hereafter it will be sent regularly; it is the fault of mailing clerks. We could not get along without you."

We are always glad to hear from our old students. Mr. G. H. Failly on March first mailed us a peach blossom from Peru, Chautauqua county, large enough for a small bouquet, and highly suggestive of Kansas go ahead—frost or no frost. And here comes a postal from Mr. Z. W. Leasure to change his INDUSTRIALIST to LaCygne, so that it may strike him directly in the eyes every week. Success to you both.

Stewart made a musical trip to Topeka this week, and says he saw so many things that he hasn't time to write them up. The State Printer is running his presses twenty-three hours out of the twenty-four; and we can just see that gentleman jerking hairs out of his moustache and saying to Harris, "Jeem's rivers, why can't you run 'em twenty-five hours out of the twenty-four?" And then Harris levels his glasses at Martin and says — nothing, the glasses do the business.

We extract as follows from a letter received from Thos. McKee, an enterprising school teacher near Skiddy, Morris county: "Your kindness in the form of the INDUSTRIALIST still reaches me weekly, for which I am very grateful to you. I find in the paper much that is practical to teachers. There is nothing so important as the practical system of education it suggests. I write to you in reference to your offer to teachers. I think it will do you good and help to encourage the children to pay attention to the practical part of their work in school."

The debate of the Webster Society was upon the question, "Resolved, That the resumption act of 1873 should be repealed." Decision for the affirmative. Extemporaneous speaking also produced a good many thoughts on the question of the evening. Upon the subject of a Society paper the Society went into committee of the whole, and some rather lively points of order were raised. The question of a paper was laid on the table.

A question regarding Darwinism and the Bible was selected for debate next Saturday evening. The members appointed for declamation, composition and select reading were continued.

REPORTER.

The Board of Regents met last Tuesday evening, all the members present, and kept at work until Friday morning, when it adjourned.

The new College building was let to the lowest bidders, Jacob Winne, of Manhattan, taking the

stone work, and Henry Bennett, of Silver Lake, the rest. The aggregate is a shade less than \$11,000; and as the appropriation is \$12,500, there will be something left after paying the architect for heating and seating. The funds cannot be drawn from the State until July, and the building will not be completed before December, but will be ready for use in the following January.

The regular meetings of the Board will hereafter be held on the first Tuesday after the first Monday of January, April, July and October, when bills will be audited.

The last number of the INDUSTRIALIST, published at the Agricultural College at Manhattan, shows the plan of their new barn. The diagrams are all "rule" work, and the craft will coincide with us in saying that it is hard to beat.—*Olath Star*.

There is a maxim, oft quoted in connection with education, viz.: that "half a loaf is better than no bread;" but I may also be allowed to remark that one blade of a pair of scissors is precious little better than no scissars at all, and so it is not well in this world to devote a year of precious time to a study which cannot be mastered in twenty years.—*Prentis, in "A Kansan Abroad."*

The new head of the INDUSTRIALIST is neat. It shows all the Agricultural College buildings; and the growth of trees since the publication of the picture of the College grounds and buildings a few months ago has been remarkable! We are glad that the College authorities have heeded the advice of the *Champion* to "plant trees." They have set a good example for the people of the State.—*Champion.*

Hon. John A. Anderson, President of the Kansas State Agricultural College, has something over 200 acres of winter wheat in this county, which bids fair to be a magnificent crop. He proposes to have over a hundred acres of prairie turned under this season. Anderson is a professor, a preacher, a printer, a telegraph operator, a journalist, a financier and a farmer; and he don't seem to have too many irons in the fire, either.—*Clay Center Dispatch.*

We are obliged to the *Dispatch*, but are never more than one of these numerous gentlemen at a time.

The Manhattan INDUSTRIALIST came out last week with a new head, pictured off in style, showing the buildings and grounds of the Agricultural College, all complete. The head is an ornament to the paper, but the College buildings are rather a shabby looking lot of old shanties.—*St. Mary's Chief.*

We wish that the *Chief* would come up and see the buildings, and then he would gracefully withdraw that last remark. These buildings are not as showy as those of the Catholic College in his town of St. Mary's, nor have they cost as much. Excluding the one now used for recitations but erected before our day for a barn, and including the new College building, all of these will have cost the State less than \$33,000. Come up some day, Evans, and see for yourself.

NATIONALIST ITEMS.

Several new classes started this week.

Prof. Ward's class in surveying is now taking practical field work.

The INDUSTRIALIST has a new heading and is happy. We repeat what we have said before, that farmers generally would do well to subscribe for it.

The Horticultural Society of Manhattan meets at the Horticultural building, College, on the 12th of March at 2 P. M. Subject of discussion, "Shade and Ornamental Trees."

Prof. Kedzie went to Kansas City Monday, to deliver a lecture at the Commencement of the Medical Institute of that city. Mrs. Kedzie took charge of his classes until his return.

C. K. Humphrey has purchased Mr. Parish's place, west of the College, and has rented it to A. L. McNair, who comes here so that his children can attend the College. Mr. Parish goes on to his farm near Milford.

Prof. Gale has commenced a collection of seeds, which will be of great benefit in detecting adulteration of vegetable grain or grass seed. By studying this collection the student can become familiar with the different seeds, and thus, frequently, prevent the importation of noxious weeds.

The next stopping place was York, a famous old place, where is the great minster, nearly as familiar to Americans from pictures as the capitol at Washington. I do not propose to describe this wonderful building, as the purpose of this letter is more particularly to speak of the country, not the town. I may remark though, in passing, that York minster is built of magnesian limestone, as is the capitol at Topeka; and as the minster has lasted some four or five hundred years, so we may hope that the present wing of the Kansas State-house will endure even till the completion of the insane asylum.

In the heart of York I saw a bit of green grass enclosed by a high wall, which interested me. It is the ancient burying ground of the Friends, long deceased, and in it is buried Lindley Murray. It would not take long to parse the last simple sentence about the old grammarian, for with Quaker plainness, it only says "that he was born and that he died;" it does not even mention that a generation of Americans learned grammar out of his little book; a generation now gone, or going, for of those who in so many country schoolhouses on so many drowsy afternoons said over and over "I love" and "you love" and "we love," most are gone away to another country where good men would fain hope that He loves.

The decent body who showed me the place knew nothing about the man of the old-time grammar, but perhaps Mr. Poutefract, the grocer at the corner could tell me; but Mr. P. knew very little about his co-religionist who labored so zealously to convince men that the personal pronoun "you" should be used only in the second person plural; but he knew, he said, a young man from America, Lindley Murray Hoag. There is no getting away, you see, from America.—*Prentis, in "A Kansan Abroad."*

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself

through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

LITERARY SOCIETIES.

ALPHA BETA.—Chartered, December 26th, 1870. Meets in College building every Friday at 2 P. M. Ladies admitted. New students cordially invited to attend.

A. A. STEWART, President.

MISS NENA M. WILSON, Secretary.

WEBSTER.—Chartered, January, 1871. Meets in Telegraph Hall every Saturday evening. Visitors, especially students, always welcome.

BERNHARD ANDERSON, President.

CLARENCE E. WOOD, Secretary.

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Going East..... 10:35 A. M.
Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.
Going West..... 6:25 A. M., and 8:35 A. M.

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ENGLISH LANGUAGE.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

MANHATTAN BANK.—E. B. Purcell, Banker; Jno. W. Webb, Cashier. A general banking business transacted. Bills of Exchange issued on all principal cities and towns of Europe. All collections have the personal, faithful and prompt attention of our attorney. Proceeds remitted promptly, at current rates of exchange, without any charge of commission.

A KANSAN ABROAD, BY NOBLE L. PRENTIS. In this volume Mr. Prentis has collected his letters first published in the *Commonwealth*, under the title of "PRENTIS IN EUROPE;" "PIKE OF PIKE'S PEAK," the interesting address originally delivered under the auspices of the Kansas State Historical Society, and never before printed; and "THE WORLD A SCHOOL," the annual address before the State Agricultural College, delivered May 25, 1875. One volume, 12mo., of 225 pages, tinted paper, full muslin binding embellished after design by Henry Worrall. Price, by mail, \$1.25. Address GEORGE W. MARTIN

[Concluded from first page.]

probable. Geology, up to the present time, has not a word to say on the origin of man. The theory that we are descended from apes is a speculation indulged in by zoologists, and based on anatomical resemblances in the living animals. No ape-like man has been found fossil, nor any man-like ape. Remains of monkeys and of savage types of men have been found; but even the Neanderthal skull was of the average capacity, and, as Huxley says, might have contained the brain of a philosopher. No geologist professes to have proved anything like a connecting link between man and apes, and till such shall be discovered Geology must be, as I am to-night, silent on that topic.

A STUDENT at the theological seminary at Andover, who had an excellent opinion of his own talent, on one occasion asked the professor who taught elocution:

"What do I specially need to learn in this department?"

"You ought just to learn to read," said the professor.

"Oh, I can read now," replied the student.

The professor handed the young man a testament, and pointing to Luke 24:25, he asked him to read that. The student read: "Then he said unto them, O fools and slow of heart to believe all that the prophets have spoken."

"Ah," said the professor, "they were fools for believing the prophets, were they?"

Of course that was not right, and so the young man tried again.

"O fools, and slow of heart to believe all that the prophets have spoken."

"The prophets, then, were sometimes liars?" asked the professor.

"No. O fools, and slow of heart to believe all that the prophets have spoken."

"According to this reading," the professor suggested, "the prophets were notorious liars."

This was not a satisfactory conclusion, and so another trial was made. "O fools, and slow of heart to believe all that the prophets have spoken." "I see, now," said the professor, "the prophets wrote the truth, but they spoke falsehoods."

This last criticism discouraged the student, and he acknowledged that he did not know how to read."—*Groser*, in "Methods of Instruction."

THIS sort of education is called in America and by Americans, "Knocking About." The course varies with every scholar, and occupies various periods of time. With most Americans it lasts from early manhood, sometimes from early boyhood, to the end of life. It is the fate of very few to graduate early; to find some sailor's snug harbor where they may ponder over what they learned, and be knocked about no more. The students of Knock About University cannot locate on the map the seat of that institution; it has no special post-office address. Like love, it is found in the camp, the court, the field and the grove. The student resides at no particular boarding house; and, as I have said before, the course varies with each student, though the course is by no means optional, since the student frequently pursues branches which he does not fancy; and, indeed, instances are of record where the course has suddenly ended at the branch of a tree.—*Prentis*, in "A Kansan Abroad."

BETTER to be unborn, than untaught; for ignorance is the root of misfortune.—*Plato*.

THE House Committee on Education and Labor have agreed to report a bill to distribute the proceeds of sales of public lands among the several States for the purposes of education.—*Exchange*.

IT is not necessary that a cow shall have cost two or three hundred dollars, or be entered in any herd book whatever, in order to make butter of the very finest quality. But it is essential that the butter-maker understands the business, and has proper facilities.—*Nationalist*.

A BILL has been reported favorably in the Pennsylvania House of Representatives to encourage the planting of trees along the roadside. This bill allows every person liable for road tax one dollar for every four trees transplanted along the roadside, the distance of such trees apart ranging from fifty to seventy feet, according to variety. A pretty good example for Kansas to imitate.—*Cherokee Banner*.

IN Germany sacks are admirably preserved by steeping them in a solution of tannin for twenty-four hours and instantly drying them. Two pounds of tan are allowed to steep in twelve quarts of boiling water for one hour, then filtered.

IN 1845 the English Parliament made a loan to her farmers of \$50,000,000 to enable them to tile-drain their farms, which was renewed in 1855. The English crop has been doubled in forty years.

The Press on the Agricultural College.

The aim of this College is to teach its pupils just what will be useful to them in after life.—*McPherson Independent*.

Several pupils from this city are now in attendance there, and are well pleased with the institution.—*Dodge City Times*.

Has taken a high position, and is entitled to the hearty support of all friends of popular education.—*Osage Mission Journal*.

An excellent institution, under the care of an able management, and a desirable place to get an education.—*Augusta Gazette*.

Gives such an education to the farmer, mechanic or woman as will enable them to earn a livelihood.—*Chase County Courant*.

Is making its influence felt for practical good, and we recommend it to those seeking a thorough education.—*Burlington Patriot*.

It is the best educational institution in the West, eminently prosperous and deservedly popular with the masses.—*Wellington Press*.

One of the best educational institutions in the West, and should be sustained and kept in a flourishing condition.—*Harvey County News*.

Is becoming deservedly popular, and is entitled to the hearty support of the friends of practical education everywhere.—*Oxford Independent*.

Farmers and other citizens who expect to send their young men or women from home to school, should address the President.—*Troy Bulletin*.

When selecting a point at which to attend school it will be well to consider the advantages of the State Agricultural College.—*Blue Rapids Times*.

Here the young idea is not only taught how to shoot, but given a practical education in the different sciences of industry.—*LaCrosse Progress*.

The attention of parents who have children they desire to educate away from home, is called to the advantages of this College.—*Neodesha Free Press*.

The College is building up an excellent reputation, and should be well supported, especially by those living in this part of the State.—*Abilene Chronicle*.

The people of the State are learning that it is an excellent place to send their sons and daughters to get a good practical education.—*Laredo Herald*.

An old and well-established educational institution, has a full corps of competent teachers, and gives the students a practical education.—*Council Grove Democrat*.

This old and well-established educational institution is among the best in the United States. It has a full corps of competent teachers.—*Jewell County Diamond*.

The result of educating young men at the Agricultural College will be to give the State men who have farming reduced to a profitable science.—*Columbus Vidette*.

This institution is the best in Kansas. The trustees and teachers are working hard to give it a first-class reputation, and it deserves success.—*Parsons Eclipse*.

This is the only school in the State which gives a practical education. All branches of education are taught by the most experienced teachers.—*Lawrence Standard*.

Is rapidly outgrowing the prejudice that has prevailed against it, and is now recognized as one of our most beneficial and creditable institutions.—*Junction City Union*.

Has taken a place away at the head of State institutions of its class. The leading idea of the conduct of the College is to make practical men and women.—*Wichita Eagle*.

Our Agricultural College is a success, and every dollar voted for the extension of its facilities brings a ten-fold return to the State.—*Alma Blade*.

If this institution does not turn out intelligent and practical farmers, it will not be the fault either of the State, or of the instructors and managers of the College.—*New Century*.

There ought to be one thousand students attending the present term of this College, and our county should be receiving some benefit from this excellent institution.—*Ellsworth Reporter*.

It is the only institution in Kansas which gives an education ready for such use by the farmer, mechanic or woman as will enable them to earn their living.—*Junction Union*.

This institution is rapidly growing in popular favor, and is an honor to and the pride of the State. Your children receive here not only a theoretical, but practical education.—*Atchison Patriot*.

The Kansas Agricultural College, at Manhattan, is the place for every boy who can be spared from home. We see the need of good practical farmers every day, and we want more of them.—*Topeka Blade*.

Has attained a degree of perfectiveness in all its various branches that is not only creditable to the management, but doubly so to the State at large. It is meeting with abundant success.—*Garnett Journal*.

Its work is eminently practical and thorough; it prepares the young for the duties and responsibilities of active, every-day life, and affords every facility for educating in the higher branches.—*Wamego Tribune*.

Stands at the head of institutions of its kind for giving a thoroughly practical education. Some of the young men and women of Barton county of whom we know would do well to attend.—*Great Bend Democrat*.

If we had forty boys to educate, we would send them all to the "INDUSTRIALIST'S" College at Manhattan. It is just the place for the growth and development of true, genuine, American citizens.—*Thayer Headlight*.

Parents who wish to give their children a good agricultural or mechanical education could not do better than to send them to the Agricultural College, as it is the best institution of the kind in the West.—*Scandia Republic*.

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Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

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A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

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Educational Calendar.—A wide-awake, spicy, newsy, Kansas paper for the Officers, Teachers and Patrons of Kansas schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the *INDUSTRIALIST*. Geo. W. Martin, Topeka.

The Western Review of Science and Industry.—A monthly record of progress in Science, Mechanic Arts and Agriculture. Sixty-four pages octavo. \$2.50 per annum, post paid. Single numbers, 25 cents. Edited by Theo. S. Case, Kansas City, Mo.

This journal has received the warm approval of most of the scientific periodicals of the country, such as *Popular Science Monthly*, *Harper's Weekly*, *New Remedies*, *American Naturalist*, *Science Observer*, &c., &c., and numbers among its contributors some of the most earnest and capable workers in the West, viz: Prof. G. C. Broadhead, State Geologist of Missouri; Prof. B. F. Mudge, State Geologist of Kansas; W. K. Kedzie, Prof. of Chemistry, State Agricultural College, Kansas; Prof. E. L. Bertrand, of the School of Mines, Colorado; nearly all of the members of the Kansas City Academy of Science, and many other well-known writers on scientific subjects.

The articles selected for its pages are taken from the very best periodicals of this country and Europe, and are chosen principally with reference to their reliability and their adaptiveness to the popular taste.

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Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

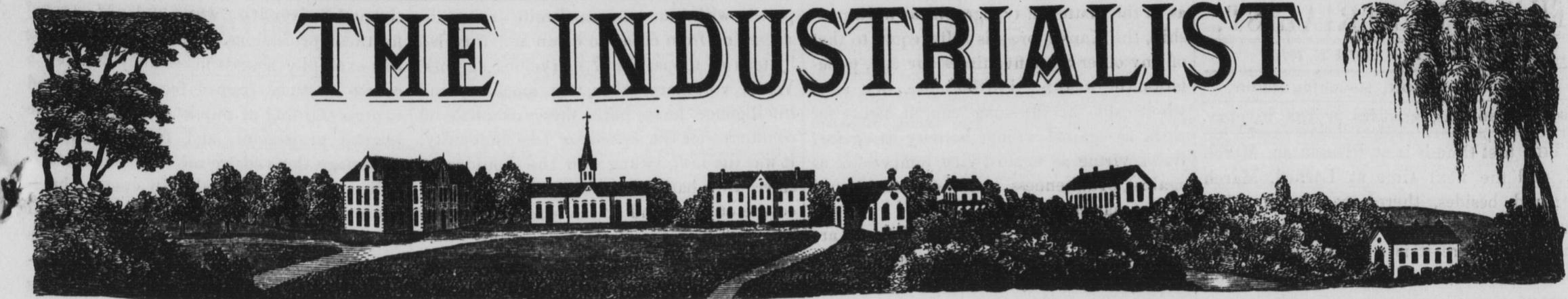
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THE INDUSTRIALIST



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Address A. A. STEWART, Manhattan, Kas.

INDUSTRIAL EDUCATION.

Not the least of the things of which Kansas has a right to be proud is its magnificent educational system. At the start a wise and vigorous policy was adopted for the education of its youth; and ever since, whether in war or peace, poverty or plenty, the State has steadily developed and carefully fostered its various educational agencies. In addition to its munificent endowment of the public schools, it has provided higher institutions for three distinct kinds of instruction, namely, normal schools for the special training of public school teachers; a university for the education of those proposing to enter the professions of law, medicine or theology; and an agricultural college for the practical education of those who will engage in any of the "industrial professions or pursuits," as distinguished from the "learned professions." The relative demand for the three forms of education is indicated by the proportion in which the citizens of Kansas follow these vocations, as shown by the last United States census. Of every one hundred persons engaged in a vocation by which money is gained, the ratios were as follows:

Normal education:	1.13
Professional education:	1.13
Teachers.....	0.43
Ministers.....	0.55
Lawyers.....	0.73
Doctors.....	1.71
Industrial education:	
In agriculture.....	59.13
In manufacturing and mechanical	14.63
In personal service.....	13.89
In trade and transportation.....	9.51=97.16
	100.00

AGRICULTURAL COLLEGE.

Recognizing the need for an education which should especially prepare the rising generations for an intelligent and successful practice of those vocations which are followed by ninety-seven out of each hundred of its citizens, the first institution endowed and put in operation by the State was its Agricultural College, so named because of the fact that agriculture is, both numerically and actually, the chief of these vocations. The title, "Agricultural" College, is apt to mislead those who are not familiar with the above fact, and also with the further fact that the acts of both Congress and of Kansas provide for an "industrial," as distinguished from a "professional" education.

ENDOWMENT.

The endowment received from the United States Government consisted of 81,601 acres of choice land, all of which had been sold at date of last report, except 31,461 acres now on the market. The proceeds from the sale of lands are invested in school bonds, and the securities in hand amounted to \$238,101.28 by last report. The annual income from this endowment is about \$20,000, out of which all expenses of instruction are paid. The only aid received from the State is for the erection of buildings, in accordance with the conditions of the congressional grant. This is the only one of the State's institutions which is not dependent upon the tax-payer for its maintenance.

LOCATION.

It is situated one mile from Manhattan, Riley county, one hundred and twenty miles west of the Missouri River, in the heart of the finest agricultural State in America. The Kansas Pacific Railway, with its connecting lines, gives speedy communication with every quarter.

COURSE OF STUDY.

The course of study is shaped with direct reference to giving an industrial as distinct from a professional education. It makes the pupil intelligent and expert in the use of the English language; in the use of numbers as employed by the farmer, book-keeper and engineer; and in the use of lines as employed by the carpenter, painter and architect. Words, figures and lines are tools which all men use. It then gives thorough instruction and laboratorial or field drill in the following sciences as essentially useful to an intelligent and successful farmer: Physiology, Practical Agriculture, Natural Philosophy, Botany, Entomology, Practical Horticulture, Landscape Gardening, Inorganic Chemistry, Organic and Analytical Chemistry, Surveying, Geology, Mineralogy, Zoology, Meteorology, Agricultural Chemistry, Political Economy, Practical Law and Logic. It has an equally practical and effective course for the education of woman as a woman, instead of as a man, and as a worker instead of as a butterfly. Then, it has a well-stocked farm and nursery, and well-equipped shops, for giving boys practice in farm and nursery work, and in wood and iron work, and for giving girls drill in dress-making, printing, telegraphy, carving, engraving and music.

AN OFFER.

For the purpose of inducing Kansas teachers to determine for themselves the ability or inability of pupils to perform the elementary operations of the branches taught in the public schools, we make any one or all of the following offers:

One number of the *INDUSTRIALIST* free for two months to that one of your pupils who, upon fair competition with the others, shall prove to be the best speller of everyday English words,—geographical and scientific technicalities being barred.

Another number free for two months to the most accurate user of figures in addition, multiplication, subtraction and division,—arithmetical and algebraic puzzles being barred.

Another number, ditto, to the one writing the most legible and neatest hand, legibility to have the preference.

Another number, ditto, to the one who makes the best floor-plans and cross-section of your school-house, drawn upon a scale of one-eighth of an inch to the foot.

Another, ditto, to the one who writes the best "local" for the nearest newspaper, the editor to name the subject and to be the judge, and the "local" to be over one and less than two "sticks" in length.

In each case except the last, the teacher is to conduct the examination and make the decision according to his or her best judgment.

HEALTHY HOMES FOR FARMERS.

SCIENCE APPLIED TO EVERY-DAY AFFAIRS.

The following is the substance of a lecture by Prof. R. C. Kedzie, of the Michigan Agricultural College, reported by the *Detroit Free Press*:

In opening, Prof. Kedzie enlarged upon the necessity of good health for the farmer, and the commercial and moral value of that great desideratum. The outdoor life of the farmer, he remarked, was conducive to good health, as were likewise the uniformity of his hours of labor and repose. But notwithstanding this, statistics prove that the lawyer, the minister and the doctor were longer lived than the farmer. Without going into all the reasons that might be assigned for this fact, Prof. Kedzie restricted himself to the field of the home as related to health. He made this plea for the healthy homes, he said, especially for the sake of women. "Man's life is in the field; his days are spent in the broader, grander and more diversified life, significantly named 'outdoors.' It was far otherwise with women. If the house is the scene of discomfort, the occasion of ill health and dragging disease, there is no escape for her except in the grave."

THE SITE FOR A HOUSE

was very important, and the farmer had far more opportunity to select a suitable place than the citizen cooped up in a small lot. He advocated the choosing of some gentle swell of ground, not a hill which one must wearily climb. The ground should flow off with a gentle declination to the south or southeast, and afforded a cheerful outlook over some portions of the farm. Swamp and low ground should be avoided; especially to the southwest and west, because the prevailing winds would then bring ague and malarial diseases to the house.

THE GROUND

on which a house is built should be free from stagnant water, both surface-soil and subsoil. The elaborate researches of Pettenkofer, of Germany, and Bowditch and others has demonstrated the close relation between the prevalence of consumption and low forms of fever and the approach of the water-line to the surface of the soil. If the soil and subsoil were not free from stagnant water to the depth of six feet, make them so by underdraining. You cannot afford to underdrain if you prize life and health.

The Professor enlarged on the question of aspect and the importance of studying the relation of the house to sun and wind. It might not be always possible to arrange this as one would wish, but when it can the house should FACE THE SOUTH OR THE SOUTHEAST. He deprecated the tendency to make everything square with the compass or at right angles, and said, with reference to the southeastern aspect, that if the farmer would make a gently winding road lead from the highway to the house, which is screened from public view by a few evergreens, he might have his house front which way he would. The living rooms should be on the eastern side of the house because this receives the first sunlight in the morning and is in the shade in the afternoon. In the summer the mornings are often chilly and the afternoons very hot. The eastern rooms will therefore be agreeably warmed by the sun in the morning and pleasantly cool in the afternoon. The eastern side of the house is also shielded from violent winds. A clump or row of evergreens should be planted near the house on the southwest and west sides to break the force of the cruel southwest winds in the winter.

THE MATERIAL.

A brick house, said Prof. Kedzie, costs more at the outset, but is more durable and may cost no more in the long run. It is less liable to destruction by fire, is warmer in winter, and cooler in summer, and affords better conditions for health than a house of wood, because the walls are more permeable by air. Dry brick and mortar afford a ready passage for air, but wet brick and mortar arrest its passage, which is one reason why damp walls are unwholesome. The difference of twenty degrees of temperature between outdoor and indoor air will cause the passage of seven cubic feet nine inches of air each hour through every square yard of wall surface made of brick. Each brick, when dry, contains from one-half to three-quarters of a pint of air; if a dry brick can hold so much of air, it can permit the air to slowly breathe through it. A house built of 50,000 dry brick will absorb an average of half a pound of water to each brick from the mortar—a quantity equal to one hundred barrels of water in the green walls, all of which must evaporate before the house is fit to live in. For a long time the windows of such a house will weep from the condensation, just as the family will weep if they move in too soon. With regard to

WALL PAPER.

Professor Kedzie said the sizing on the paper and the sizing used in placing the paper on the wall prevent almost absolutely the passage of air. A house must breathe to be healthy, just as truly as an animal, but a wet wall and a papered wall is a strangled wall. We hear much of the hygienic value of perforated buckskin. It would be just as sensible to perforate a wire sieve. Air will pass through leather, and every garment must be penetrated and washed by air to preserve health. The house is only a huge overcoat. Wood is permeable by air in the direction of the grain. Very little air passes when the siding is painted. The

air in wooden houses passes through cracks between the boards, thus causing disagreeable draughts. The walls of a house should breathe, not blow. There is a method of building coming into use which is not expensive, and which promises good results, viz., building a frame of wood and veneering it with brick, or inclosing the frame with a four-inch wall of brick.

RAT-PROOF WALLS.

Rats seriously interfere with the healthfulness of a house. If you build of brick, bring forward one course of brick, so as to everywhere touch the baseboard at the bottom of every room; at the top of every room bring forward another row of brick so as to touch the plastering, and thus cut off every hollow space in your walls at top and bottom. If you build of wood, let in a piece of scantling between the studding at top and bottom, and lay a tight course of brick and mortar on the top of these pieces of scantling. Brick up the spaces between the ends of your joists.

He inveighed against the short-sighted, inconvenient and unhealthy practice of building half-stories, productive of sweating boxes, and saving only an inconsiderable trifling, as the same expense would roof the building.

GOING OUT INTO THE WORLD.

I say "going out into the world," and I use the expression advisedly. The young man or woman who has passed twenty years of life, who has known something of struggle and toil, incurred possibly to avail himself or herself of the advantages of this very institution, may think that he or she is already in the midst of the great world; but this is hardly the case. New York harbor is a part of the ocean; the water is salt and sometimes rough, and the breeze that blows over it is fresh and strong, and the tide rises and falls; but no ships are ever seen under full sail in its waters. They are towed about by steam tugs, and it is only when you are outside of the Narrows, and the tug has cast off and the pilot is gone, that you are at sea; and the difference is, that from that time, on her journey through light and darkness, through sunshine and storm, near the low reef or sunken rock, for thousands of miles, until the once familiar stars are gone and even the heavens are strange, the good ship must care for herself alone. For days she sails the lonely deep, nor sees the faintest glimmering of a friendly sail. When the sky grows black, the waves grow white, and the vessel rolls and groans like a sick man in his sleep, she cannot run into a friendly harbor; her salvation depends on her keeping off shore. If there are defects in her construction, if she is ill-manned, or if her rigging is worn when she leaves port, she cannot return to mend these defects. Courage and skill on the part of the officers must repair damages and provide against calamity. But there is no going back. She is at sea.

And this it is that makes going out from an institution like this really going out into the world, because it marks the limit between dependence and self-help.—*Prentis, in "A Kansan Abroad."*

It is remarked with emphasis that the time for the study of the elements of natural science may be secured by a thorough revision of the old seven branch course of common-school studies. Not more than one or two of them can be dispensed with, and not one need be, in order to make room for the new studies. How, then, is the necessary time to be gained for the natural science? By eliminating or discarding all useless or superfluous matter from the text-books, and thereby saving wasted time. This, with improved methods of teaching, will effectively solve the problem.—*Newton Bateman.*

THE INDUSTRIALIST.

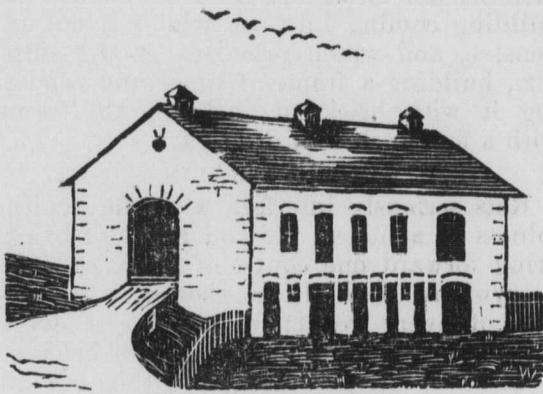
SATURDAY, MARCH 16, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE first time it is at Pleasanton, March 21, and the next time at Larned, March 29; and, besides, there are several other times that we don't know of, but every time and everywhere it is a treat. Which the same it is Noble L. Prentis' lecture on Europe.

WE give herewith a rough cut showing the elevation of the College barn, the point of view being on the lower side of the hill. From the upper side, but one story appears:



The Kansas Press.

The INDUSTRIALIST receives regularly one hundred and sixty of the one hundred and eighty odd papers published in Kansas. The reading thereof takes no little time, but always gives pleasure; and it naturally suggests the subject of the Kansas press.

There are very few persons outside of a printing-office who don't know exactly how to run a paper. Most vocations require some antecedent training; but, according to the notion of these persons, the ability to run any other man's paper is an inborn power of the American citizen. He can do that just as easily as he can stand on a street-corner and inform his companions exactly how each passing gentleman ought to manage his particular affairs, although he has no more knowledge of those affairs than a cat has of theology. If there is any business that requires less brain than that of minding some other man's business, we don't know what it is; and the men who engage in it heaviest are the shallowest. And these are the hombres who most howl about the local and State press, authoritatively showing just what it isn't and just what it ought to be; and the force of their authority bulges up from what they don't know about it. Selah!

Editors are neither perfect nor infallible, but they certainly have the very decided advantage over the hombres which arises from the constant doing of a thing. Any man who follows a given business year after year has knocked into him a lot of experience that the outsider does not, and thus gradually acquires a fitness for that particular business which the other has not; and, as a general proposition, the chances are that Kansas editors are about as competent to decide upon the best way of conducting their own papers as are the hombres.

There is not a single paper in the State which could not be and would not be better run if — it had a better support. The difficulty lies in the want of means, and not in the want of either brains or skill upon the part of Kansas editors — the hombres to the contrary notwithstanding. Of course we are speaking of the State press as a whole. Our experience, based upon the reading of exchanges, is that in the presentation of general and local news, of brainy editorials, and of fearless discussions of all questions affecting their readers and locality, as well

as in the matter of typographical workmanship, the Kansas press is fully equal to that of any other State five times our age, population or wealth. Furthermore, that as a whole and in the long run, it fights for right as against wrong, honesty as against fraud, virtue as against vice, temperance as against drunkenness, and the greatest good of the masses.

Any man may be deceived; all men are more or less swayed by personal interest; and editors are only men. But we have yet to meet the man who, when his own interests were not involved, deliberately preferred ignorance to knowledge, error to truth, or wrong to right. It so happens that what is the interest of one locality is not the interest of another; that what will be advocated by one journal will be opposed by another; that in the discussion the real truth will sooner or later appear; that in due time men will see and accept the truth; and, therefore, on the average, and in long periods, both the press and the people rally about the truth and march with it to victory. The men who, as a class, watch the fight closest are the editors, for the simple reason that they are leaders, and have a greater interest in knowing how the battle is going and on which side of countless issues affecting their readers the truth lies. No other man in any locality is so quick to see a movement which threatens to help or hurt that locality, and no other one deals with it so promptly, or contributes more liberally of his labor and space to promote the general interest. The moral of all which is, give your editor more patronage and less growling.

The Problem Solved.

We live in an age of unparalleled progress and grand social revolutions. Science, like the precious cornucopia of by-gone times, pours out, day after day, its innumerable and startling discoveries, and places new and serviceable agents at our disposal, inviting all to come and partake. Closely after, as in a race, follow the mechanic arts, utilizing these new powers for the benefit of the human family. The time is approaching when every occupation which requires no skill and only brute force shall cease to be the daily work of human beings. The machine will then do our routine work, and do it cheaper and better, too. Why should a human being be doomed to spend his days in ascending and descending a ladder with a load of bricks on his shoulder, when at one-tenth of the cost a machine made of iron and driven by coal will do the work?

This golden age is fast approaching. Lavalle's dredging-barges driven by steam excavated in our day the Suez Canal in less time than 20,000 laborers could have done by means of hand tools only. A large eastern cotton-mill spins and manufactures into calico more raw cotton than 100,000 spinners and hand weavers could with the primitive hand tools of our forefathers. Similar agencies, multiplying the power of the human arm a thousand-fold, are to-day completely changing agriculture and husbandry. Agriculture is fast becoming chemistry, and husbandry machinery. The stupid drudgery of our forefathers is a thing of the past. One man to-day does more work on a farm, raises a larger crop, and does it easier and better, than four men a century ago.

Sometimes we look back with amazement to the age of king Cheops, the builder of the enormous pyramids in the plains of the Nile. We wonder how men could have heaped such gigantic stone-piles without a knowledge of the sciences of the day; but what insignificant jobs are they when com-

pared with our thousand-mile railroads, stretching from ocean to ocean and traveled by tens of thousands of marvelous engines. While voluntary labor, the machine, and intelligence have built these channels of commerce for the benefit of free humanity, it was the lash, swung over the shoulders of slaves by a barbarous despot, that constructed the other, — and to no sensible purpose whatever.

This may illustrate the secret of the success of our century. There servile toil, here voluntary labor; there stupid drudgery, here intelligence with its machinery; there work to no purpose; here "the paying end first." It might be said that our time fails to produce a Plato or Aristotle; but we can answer with Newton, Liebig, Gauss, Laplace, Morse, Stephenson, etc. Instead of studying the abstract and therefrom forging new systems of mental philosophy, the nineteenth century aims to understand and conquer the concrete. That universal welfare which the philosophers of Greece and Rome could not create, will be an accomplished fact through the influence of the science and industrial art of modern Europe and America.

Cæsars have tried to solve the problem by glorious conquests of other nations, Pizarroes by discovering new gold fields, and Machiavellis by tying Gordian knots of court trickery; but the first tempest that swept over their empires proved that their structures were card-houses. Now, after ages of fruitless experiment, the problem becomes solved and presents itself to the modern statesman and student of political economy in such a simple form that we can hardly understand how it ever could have puzzled a live brain.

Diogenes taught that poverty was a virtue. Diesterweg, the founder of Prussia's public school system, a type of the nineteenth century school-man, says, in a lecture to his fellow-teachers: "You may teach your pupils to be contented, but show them also that poverty is no virtue. A certain amount of wealth is indispensable to the welfare of individual and nation. A poor nation never did anything great. Teach your pupils to earn all they can, and teach them to use it for the greatest benefit to themselves and their neighbors." His words were heeded, and the result is known. The immense sums annually expended, and all the strenuous efforts made in the various countries of Europe, for industrial education, show that statesmanship has at last found out that political prosperity depends upon the prosperity of the civil community.—J. D. Walters.

Common School Studies.

The term "education" is quite as general as the term "dry goods." Its value depends upon an ability to supply the wants of the user, and therefore it varies in value just as these wants vary. No man pretends that a course of study which best qualifies a pupil for banking, equally, or at all, qualifies another pupil for farming; because the banker prospers by understanding and obeying the laws of exchange, and the farmer those of production — laws which are as different as those of steam and stars. The real worth, therefore, of the instruction given in the public schools depends upon the vocations which the pupils will follow in after life, and upon the use which they will have in these vocations for the knowledge and skill it affords. All admit that the existing course is designed to give pupils that training which is deemed of most value in the work of the learned professions. We received it from the older States; they, from Europe; and no one can deny that the con-

tinental universities were and are erected for these professions. So that, in following this example, Kansas necessarily adopted a course of study framed for the direct and express training of pupils preparing for the learned professions, and from which any advantage derived by all other students is indirect and accidental. In every school-house from Atchison to Great Bend and from Fort Scott to Beloit, the 147,000 pupils of Kansas, forming a grand orchestra maintained at the public expense, are playing year after year the opera of the Barber of Seville; and if any of them wish to rehearse the Anvil Chorus or the Song of the Shirt, they must go out-of-doors and whistle on their own hook. If any one doubts this statement, let him analyze the course of study, and see if there be any other basis on which he can answer the query: "Why are the branches in their present proportions? Why so much fancy grammar, abstract mathematics, classics and sciences that nobody ever uses except professors in colleges?" He will soon see that either it is directly designed for the professional pupils, or it never was "designed" for any purpose under the sun.

Now, what vocations will the pupils follow as adults? Those which the adults of Kansas now follow. For while it is not true that the son of every farmer will be a farmer, or of every lawyer a lawyer, yet it is true that in an agricultural State the general ratio of vocations remains nearly the same from generation to generation. It is upon the certainty of this law of averages that millions of dollars are profitably invested in the life and fire insurance. So that for our purposes the immediate future may safely be judged by the recent past.

In 1870, as shown by the U. S. census, our latest data, Kansas had a population of 364,369. Nearly one-third of these persons were under ten years of age. Of the remaining 258,051, a little less than half, 123,852, were employed in some of the many vocations by which money is gained. Grouping the detailed pursuits under the general headings of agriculture, personal service, manufactures, trade and transportation, and professional, the percentages were as follows: In every one hundred persons, fifty-nine (59.13 per cent) were engaged in agricultural industries, fifteen (14.63) in manufacturing and mechanical industries, fourteen (13.89) in personal service not otherwise grouped, ten (10.00) in trade and transportation, and less than three (2.85) in what are known as the learned professions. Of this latter group, one (1.13) person in the whole hundred was a teacher, three-quarters (0.73) of a man a doctor, half (0.55) a man a lawyer, and less than half (0.43) a man a preacher.*

While the population has largely increased, yet the increase has been chiefly of industrialists, and it is not likely that these ratios have materially changed.

In the face of these facts, can any man prove to the satisfaction of the people of Kansas that a course of study framed for the direct benefit of the professional classes, and only indirectly or not at all for that of the industrial classes, is calculated to give the greatest good to the greatest number of pupils? Are the interests of the ninety-seven scholars to be subordinated to the interests of the three?

Why, in the year 1870, there were as many butchers and more milliners than preachers; as many shoemakers and more painters than lawyers; more masons and twice as many blacksmiths as doctors; three times as many house servants as teachers; and two thousand more carpenters alone than all of these professional classes put together. There were only 3,532 persons in the professions, while there were 21,714 farm laborers — the mass of whom will become farmers, and, in addition, 50,820 farmers, with a total of 73,228 persons engaged in the single industry of agriculture alone.

*I am one of this class, and stand behind no man in fully estimating the worth of that profession which seeks the truest welfare of humanity. My point is that the professions are able to take care of themselves, and, in doing it, should not absorb the public schools.—J. A. A.

THE INDUSTRIALIST.

SATURDAY, MARCH 16, 1878.

There were forty-six students who reached the first rank the past month.

A number of strangers, from all parts of the country, have visited the College this week.

The wheat on the College farm is in a splendid condition—especially the experimental plat.

W. C. Stewart is in Manhattan, and will remain two weeks. He says that boy of his weighs just a ton.

We call attention to the advertisement in another column of stock for sale by the Farm Department.

Our stock is increasing rapidly. A litter of choice Berkshire pigs of the finest breeding is among the latest arrivals.

We will be happy to send the INDUSTRIALIST free to any teacher in Kansas for two months. Send in your address immediately.

Three teams are constantly at work on the farm turning over some of the richest of Kansas soil, and doing other spring work.

"A Kansan Abroad," that book from the pen of the inimitable Prentis, will be issued from the Kansas Publishing House in a few days.

Another fine Shorthorn calf presented itself at the College barn the other day and asked for special favors. Grace Young is caring for it.

We would say something complimentary about the weather, but if we do it will surely change, and so we are content to enjoy it in silence.

Peach blossom almost ready to bloom, and if this weather continues will soon be out; but if this weather does not continue—good-by, peaches.

Spring work in the Farm and Horticultural Departments is being rushed along during this fine weather as fast as time and means will allow.

There has been a marked improvement in the appearance of things around the Horticultural and Mechanical buildings. The ground has been carefully graded and seeded to grass.

During the past week some of our students have been compelled to go home to engage in farm work. We are sorry to part with them, for they are earnest, hard working boys.

Mr. W. P. Popenoe, member of the State Board of Agriculture, Treasurer of the State Grange, and one of Shawnee county's best farmers, gave the College farm an overhauling yesterday.

Any boy or girl who wishes a thorough, practical and sensible education for business life can get it at less cost and in a shorter time at the Agricultural College than anywhere else. Send for catalogue.

Parties interested are requested to notice the call for township and county bonds, when issued either for building or bridge purposes. Always address E. Gale, Loan Commissioner, Manhattan, Kansas.

Judge Clardy, of Wamego, made us a very pleasant call last Monday morning. The Judge has some very practical ideas on the educational question. He proposes to send his sons to the College next term.

We are requested to announce that a Grand Musical Convention will be held in Council Grove, Kansas, from the 16th to the 19th of April, inclusive, to be conducted by Prof. H. S. Perkins, of Chicago, Illinois.

We were pleased to receive a visit on Monday from Arthur Stewart, the restaurant man of Topeka, a former resident of Manhattan and student in the College. He came up to attend the funeral of Rev. R. D. Parker's father.

Mr. Thomas Wells, living some two miles west of the College, was badly injured last Friday by a fall from a wagon loaded with corn stalks. The wheels passed over his head and arm, and had not the ground been soft the wounds would have been more serious.

Mr. Sutton, an experienced farmer and stock raiser of Floyd county, Iowa, after looking over the College herd of Shorthorns last week, pronounced them as good a lot as he had ever seen, and not surpassed individually by the best of the Canadians which he has lately visited.

During the week the farm has thoroughly tested the working of Perkins' Patent Flexible Tripod Harrow, sold by Messrs. Dow & Raphel, of this city. The implement itself is a good deal longer than its name,—just thirteen feet eight inches, in fact,—and better work and more of it we have never seen done by a harrow.

And this is the testimony which comes from a prominent gentleman in New Jersey, to whom a specimen copy of our paper was sent: "The INDUSTRIALIST is highly appreciated, and read regularly by more than one educator here. I intend quoting from it in the county paper, for which I am correspondent and agent. I think I can place a copy where it will do good, if you are disposed to send it."

The wave of temperance enthusiasm which was started in this city during the Reynolds meetings has rolled out into nearly every school district within a radius of ten miles of Manhattan. Three or four sets of recruiting officers are sent out in different directions every Sabbath, and the increased interest in the temperance movement and the multiplicity of blue ribbons tell the story of their labors.

Last Saturday night being the time for the election of officers in the Webster Society, the debate was postponed. The election resulted as follows: President, L. A. Salter; Vice-President, A. N. Godfrey; Recording Secretary, Tully Scott; Corresponding Secretary, James A. Bell; Treasurer, Irving Todd; Marshal, A. Beacham.

The question of Society paper, laid on table at last meeting, was taken up, and it was decided to have a written paper read every week by one editor. The first number will be presented in two weeks, A. N. Godfrey, editor. *REPORTER.*

Alpha Beta Society called to order March 8th by George H. Perry. President and Vice-President being absent, Amos E. Wilson was chosen to act as President pro tem. Debate was upon the question: "Resolved, That uneducated men make the most successful farmers." Decision in favor of negative. The *Gleaner* was read by Miss Grace Parker and George H. Perry. The duties assigned for next week are: Declamation, G. L. Platt; essay, Ezra Clarke; *Gleaner*, Miss Hattie Allen. The next number of the *Gleaner* will be edited by A. T. Blain and Jennie Coe. The following officers were elected to serve the remainder of the term: President, G. L. Platt; Vice-President, H. F. Coe; Secretary, Estella Bouton; Treasurer, H. A. Platt; Marshal, Chas. McConnell; Reporter, Chas. McConnell. Pay us a visit. *C.*

During the past month the following students have stood in the first rank, having made an average grade of ninety-five or over in all their studies:

Barton—Wm. H. Mitchell, Crume Pegan.
Cherokee—Alice Allen, Hattie Allen.
Clay—Jasper Cowell, John R. Raider, Etta Wylie, John Wylie, Oliver Wylie.
Cloud—Kate Bean.
Dickinson—Wm. Day, Amos E. Wilson, Nena M. Wilson.
Greenwood—Estella Bouton, Albert N. Godfrey.
Johnson—James A. Bell, Albert Dickson, James Dickson, Thomas R. Moore.
Lyon—Clement O. Smith.
Marshall—Augustine Beacham, Pierce Hickey.
McPherson—Bernhard Anderson, Charles Lundberg.
Missouri—Henry F. Coe, Jennie A. Coe.
Mitchell—Tully Scott.
Montgomery—Lewis A. Salter.
New York—Henry W. Thorne.
Osborne—Wilmer K. Eckman.
Ottawa—Sils C. Mason, Wm. E. Rollings.
Pottawatomie—Julia Finney, Corwin J. Reed.
Riley—Arthur Blain, Ellen Fletcher, Mina J. Hosmer, Fletcher M. Jeffrey, Emma Knostman, Enna L. Parish, George L. Platt, Gus H. Platt, Ella Vincent, Rowena J. Whaley, Clarence Wood.
Sedgwick—Emma L. Cook.
Shawnee—Lewis W. Call.

ENTERPRISE ITEMS.

There is going to be a town clock on the new school-house.

The father of Rev. R. D. Parker died last Sunday, and the funeral was held on Tuesday. He was nearly 86 years old.

Prof. D. Hungerford was admitted to the bar of practicing attorneys last Wednesday. He passed an excellent examination.

The INDUSTRIALIST has a new head—the cut representing how the College grounds and buildings are expected to look when completed. The design was executed by Prof. John Walters, of Industrial Drawing.

The Dr. Hunting Division of sons of Temperance, No. 54, was organized by Rev. Wake last Saturday evening. Rev. A. D. Goodwin was elected W. P.; Dr Little, P. W. P.; S. G. Hoyt, R. S. Regular meetings will be held every Monday night.

Mr. Wilder informs us that, having raised one-half the amount necessary to erect a fountain in the park at the depot from the citizens of Manhattan, the railroad authorities have notified him that they will furnish the balance, and consequently the fountain is a fixed fact.

NATIONALIST ITEMS.

Last week Judge Harper brought us a stalk of alfalfa two feet long that had grown this year.

At the Reynolds meetings in Salina, over 2,000 signatures were obtained to the Murphy pledge.

The new organ for St. Paul's Church has arrived, and will be ready for use soon. It is decidedly the finest organ in this part of the State.

We understand that Walter C. Howard will join

the M. E. Conference this session, and take work wherever sent. We wish him good success.

Maples have been in blossom for several weeks, and this week we saw peaches blossoming, plums budding. Gardening has generally commenced.

Louis Humphrey, from Milford, was in town this week, and was cordially greeted by his numerous friends. He has been teaching, and just now has two weeks' vacation.

The Webster Society will next week commence the issue of a written paper, the *Webster Reporter*. It will be original, the Society constituting its corps of correspondents.

Spring is upon us; the meadow lark, mosquito and frog sing their wonted lays, and the wheat grows green all around. The weather is splendid for work, and farmers are busy.

Gen. Judson Kilpatrick will lecture at the Presbyterian Church, Monday evening, March 25th, for the benefit of the Manhattan Institute. His subject will be "Sherman's March to the Sea." Admission, fifty cents; three tickets for \$1. From the national reputation of the lecturer, we presume that those who desire seats had better procure tickets in advance.

The College Drill Club was organized last term for the purpose of practice in parliamentary law. It now has a membership of twenty-seven. Much interest is shown in the meetings, there being no lack of motions and resolutions. President Anderson and other members of the Faculty take an active part. The Club meets Wednesday of each week at 7 P. M. All interested in parliamentary practice are cordially invited to attend.

PRESS NOTICES.

The INDUSTRIALIST, of Manhattan, comes out with a new heading which looks very neat and attractive.—*Florence Herald*.

The INDUSTRIALIST has adopted a new heading, in which is shown the College buildings, with forest trees in the background, giving the paper a very tasty appearance.—*Garnett Plaindealer*.

The Manhattan INDUSTRIALIST comes out with a new head, representing the Agricultural College grounds and buildings. It is a live paper, and we are pleased to see it prosper.—*Oskaloosa Independent*.

The Manhattan INDUSTRIALIST has just received a new head, and it makes quite an improvement in the appearance of a before good-looking paper. We are glad to see this indication of prosperity, and hope that this useful little paper may continue to flourish.—*Iota Register*.

The INDUSTRIALIST, the Kansas Agricultural College paper, comes to us now very much enlarged, with a new head and otherwise improved. Although one of the smallest, it is one of the most interesting exchanges coming to this office. Long may it wave.—*Washington Republican*.

The INDUSTRIALIST comes to us with a beautiful new heading, showing the Agricultural College buildings and grounds. We had no idea that those things would look so nice on paper. As pretty as a picture. President Anderson says, "Oh! my, somebody fan us—gently."—*Junction Tribune*.

We hereby pat A. A. Stewart on the back. Those diagrams over there are "rule" work, which the same he set up.—*Industrialist*.

Those diagrams are tiptop, and reflect credit upon the gentleman who set them up. While you are at it, pat him two or three for us.—*Kirwin Progress*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplish-

ment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$8 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as is own interests requires and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending March 14th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.
	Max.	Min.	Mean.	
Friday.....	858°	30°	49°50	28.16
Saturday.....	954	27		

THE INDUSTRIALIST.

SATURDAY, MARCH 16, 1878.

A Billion Dissected.

A curiously interesting letter was published in the *London Times* a few days ago, from Mr. Henry Bessemer, under the heading "A Billion Dissected." The writer tries to convey to the ordinary mind some idea of what a billion—"a modest 1 followed by nine cyphers"—really is. He does this by means of illustrations drawn from familiar objects of thought and sight. Attention is thus called to a billion, as a measure of time, distance and weight. When we speak, for example, of a billion of seconds, we, perhaps, suppose that since the commencement of our era, such a number has long since been measured out. Arithmetic shows us, however, that "we have not even passed one-sixteenth of that number in all these long eventful years, for it takes just 31,687 years, 17 days, 22 hours, 45 minutes, and 5 seconds to constitute a billion of seconds."

A billion of sovereigns would extend, when ranged side by side in piles of twenty feet high, so as to form two parallel walls, a distance of 2,386½ miles; or, if placed on the ground, so as to form one continuous chain by each sovereign touching the one next to it, such a chain would encircle the earth 763 times. The weight of the same sovereigns would be 6,975,447 tons. As to altitude, we are informed that a billion sheets of the *Times* "superimposed upon each other, and pressed into a compact mass," would reach to the height of 47,348 miles! Most readers who follow such statements as these will be disposed to agree with Mr. Bessemer that "a billion is a fearful thing, and that few can appreciate its real value," and that "as for quadrillions and trillions, they are simply words wholly incapable of impressing themselves on the human intellect." And yet, one cannot help suggesting, what are even these baffled conceptions as to time compared with eternity! We may well use such a word with awe.—*Exchange*.

Investigation.

But somebody, not a scientist, may ask, "Do you declaim against all investigation of the mysteries of Nature?" Certainly not. Consider the grasshopper, how he grows. He is a mystery. Whence he cometh and whither he goeth, we cannot tell. Find out, if you can, why a miserable insect which a child can crush beneath its foot ravages whole States, while man with all his boasted resources seems powerless to resist him. Mysteries! secrets! If you would investigate them, the world is full of them. The forces of nature, electricity and the rest, have existed from the beginning, but how long has man known of their power, how much does he know now? The lightning flashed before the blinded eyes of Adam, but how long since the electric spark became not the terror but the friend of man? Steam curled up from the kettle of Tubal Cain, but how long since man knew how strong were the shoulders of the imprisoned vapor which now bears so many burdens? Charcoal lay in the ashes of the first fire kindled by man on the earth; nitre formed on the walls of the cave; and sulphur lurked in the earth: but how long since man knew that these substances, harmless apart, were, linked together, a black conspirator who without warning can tear a city or a mountain to fragments? No man can say that further investigation on these lines will reveal nothing. How long is it since gunpowder, supposed to be the most powerful of all explosive substances, was found to be to nitro-glycerine what a boy's strength is to a man's? Investigation! There is room for enough of that to fill the next thousand years, during which the question of our primitive gorilla-hood can be suffered to rest.—*Prentiss, in "A Kansan Abroad."*

ONE day the emperor Napoleon, while still first consul, paid a visit to the college at Campiegne, and questioned some of the elder pupils as to what they intended to do on leaving college. He was much dissatisfied with their answers. "The government," said he, "pays considerable sums to educate these young men, and when their studies are ended, none of them are of hardly any use to the country. Nearly all of them remain at home, a burden to their families, which they ought to aid. This shall continue no longer. I have just visited the great man-

ufacturing establishments in the north, and the larger workshops of Paris. I everywhere found foremen clever in the manual labor of their trades, but scarcely one among them able to draw the outlines or make the most simple calculations, of a machine to convey his ideas by a sketch or a written description. This is a great defect, and I will here provide the means for remedying it. There must be no more Latin here, but the study of trades, with so much theory as is necessary for their progress. By this course we shall obtain well-taught foremen for our manufactures."—*Report on Industrial Education, France.*

Brilliant Teaching.

Teaching that is showy and brilliant is not usually the best; on the other hand, it is frequently the worst. A skillful teacher may ask questions in such a manner as to make it appear his pupils are very well informed, while they may know very little of the subject before them. An illustration of the difference between brilliancy and knowledge occurs in the life of Sir Astley Cooper. He was visiting Paris, and was asked by the surgeon *in chief* of the empire, how many times he had performed a certain wonderful feat of surgery. He replied that he had performed the operation thirteen times. "Ah, but monsieur, I have done him one hundred and sixty times." How many times did you save his life? continued the curious Frenchman, after he had looked into the blank amazement of Sir Astley's face. "I," said the Englishman, "saved eleven out of thirteen. How many did you save out of one hundred and sixty?" "Ah, monsieur, I lose dem all; but de operation was very brilliant."—*Barne's Monthly.*

Agricultural Education.

The first agricultural school was founded by Fellenburg in Switzerland, in 1806, from which thousands of pupils have been graduated, giving to that country a great and lasting impetus to the progress of civilization, intelligence and wealth. In Prussia there is not a province but can boast its agricultural school and model farm, and Ireland has over two hundred farm schools. It is understood by political economists abroad that any one, however ignorant, cannot be a farmer, and this idea is becoming prominent in this country. To till the ground effectively and profitably, requires fully as much technical knowledge as any of the professions. The farmer should understand something of chemistry, geology, botany, zoology and mechanics, in order to conduct his calling intelligently. The agricultural schools of our own country are calculated to raise the standard of agricultural knowledge here, and great results are anticipated through this agency.—*Colman's Rural World.*

Young Girls.

Our young girls do not understand the witchery of bright eyes and rosy lips, but set off their beauty by all the artificial means which lie in their power, never reflecting that by so doing they destroy their principal charm—that of innocence. The rounded cheeks, the bright eyes, the waving hair of a girl in her teens need only the simplest setting. Rich fabrics and sumptuous adorning are more for the matron, her dress gaining in ample fold and graceful sweep as she puts on the dignity of years. The seasons teach us something here, if we go to nature for an object lesson. How different her charm from the deep, maturing summer, when the hues are decided, and the air is loaded with perfume from a thousand censers. The school-girl is only on the threshold of summer. She has not crossed it yet. Let her copy the sweet grace of the spring on her graduation day, and discard artificiality for nature.—*Exchange*.

A Simple and Useful Invention.

A curiously simple and ingenious leveling instrument has been invented by a Dresden engineer. Two glass tubes, standing upright on feet and open above and below, are connected at the bottom with an India rubber tube of any desired length. If water, therefore, is poured into one of these tubes, it will naturally rise to the same height in the other, however uneven may be the surface on which they stand. When ground is to be leveled, the tubes are simply set up at convenient distances and stakes put in the ground so as to reach the height of the water level. The more uneven the ground is, the higher must the tubes be, though the inconvenience arising from this may be alle-

viated in a measure by the use of temporary supports. The peculiar advantage of this instrument is that leveling may be performed with it around corners.—*Boston Transcript.*

No text-book should be admitted into the school-room, unless printed in large, clear type.—*Alma Blade.*

IN the markets of the eastern cities, Kansas broom-corn commands higher prices than that from any other State, because of its fine and durable qualities.—*Atchison Champion.*

It is cheaper to educate people from going to penitentiaries than paying their way when there. It costs about \$1,200 to convict a criminal and send him up.

Telegraphy.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

Dress-Making and Millinery.—Daily instruction and drill in hand and machine sewing; cutting, fitting and making dresses; and all branches of millinery, by a practical teacher.

Farming for Profit.—Special courses in Kansas Practical Agriculture. Simple Tillage, Farm Implements, Comparative Physiology, Stock Breeding, Mixed Husbandry, Rotation of Crops, Manures, Feeding, Buildings. Apparatus illustrating the course in Practical Agriculture

Chemistry and Physics.—The most valuable and practical course in the West. Elementary Physics, Inorganic Chemistry, Organic Chemistry, Chemical Analysis, Agricultural Chemistry, Metallurgy, Chemical Physics, Meteorology, Pharmaceutical Chemistry, Photography and Household Chemistry.

Kansas Publishing House.—Standard Stock, Standard Work, Standard Prices, to be had at the Bindery and Blank Book Manufacturing of George W. Martin, Topeka, Kansas. Orders from counties and townships solicited. All sorts of books made, bound and rebound. Legal Blanks, Seals, Stationery and Job Printing.

Habits of Plants.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

Mathematics.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

Special for Woman.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

Club Rates.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.00.

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Agricultural College Lands.—These lands are in the market, as provided by law, and for sale for one-eighth cash, balance in seven equal annual payments with ten per cent interest, payable annually. The lands are all choice selections, and prices range generally from \$5.00 to \$6.25 per acre. Some of the best tracts are appraised at from \$8 to \$10 per acre, and they are well worth the money. These lands are located in Washington, Marshall, Clay, Riley and Dickinson counties. For particulars, maps and descriptions, address L. R. Elliott, Agent, Manhattan, Kas.

Printing!—Daily instruction and drill in the work of a First-Class Printer. The Literary Departments offer a thorough education in the construction and use of the English Language, as employed by the Proof-Reader; in Book-Keeping; and in Industrial Drawing, as the best developer of that taste necessarily exercised by every good Job Printer. The Printing Department is well furnished with all the facilities for a speedy mastery of the art of Printing, and is in charge of a practical printer. Besides regular class instruction in printing, the weekly publication of the *INDUSTRIALIST* by the Department furnishes advanced students the requisite drill in newspaper work.

A Kansas Text-Book, for teachers and students. ELEMENTS OF AGRICULTURAL GEOLOGY, for the Schools of Kansas, by Prof. Wm. K. Kedzie, M. S., of the Kansas State Agricultural College.

"It presents the subject in simple, untechnical language, easily comprehended by the pupils for whom it is intended. It is thoroughly practical in its teachings, and, at the same time, from a scientific point of view, it is rigidly exact."

In two parts: Part First—Elementary Geology

Part Second—Origin and Formation of Soils.

Wholesale price, \$4.80 per dozen; Van Antwerp, Bragg & Co., Cincinnati and New York. Retail price, 45 cents; for sale by S. M. Fox, Manhattan, Kansas.

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Gardening for Profit.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

Educational Calendar.—A wide-awake, spicy, newsy, *Kansas* paper for the Officers, Teachers and Patrons of *Kansas* schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the *INDUSTRIALIST*. Geo. W. Martin, Topeka.

The Western Review of Science and Industry.—A monthly record of progress in Science, Mechanic Arts and Agriculture. Sixty-four pages octavo. \$2.50 per annum, post paid. Single numbers, 25 cents. Edited by Theo. S. Case, Kansas City, Mo.

This journal has received the warm approval of most of the scientific periodicals of the country, such as *Popular Science Monthly*, *Harper's Weekly*, *New Remedies*, *American Naturalist*, *Science Observer*, &c., &c., and numbers among its contributors some of the most earnest and capable workers in the West, viz: Prof. G. C. Broadhead, State Geologist of Missouri; Prof. B. F. Mudge, State Geologist of Kansas; W. K. Kedzie, Prof. of Chemistry, State Agricultural College, Kansas; Prof. E. L. Bertroud, of the School of Mines, Colorado; nearly all of the members of the Kansas City Academy of Science, and many other well-known writers on scientific subjects.

The articles selected for its pages are taken from the very best periodicals of this country and Europe, and are chosen principally with reference to their reliability and their adaptiveness to the popular taste.

Being the only journal of the kind in the West, it should receive the patronage and scientific contributions of western men at least, the assurance of the Editor being pledged that as rapidly as the support given him will permit, he will enlarge the REVIEW and add to its attractiveness and usefulness by suitable illustrations, and in every other manner possible.

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THIS College furnishes a thorough and direct education to those who intend to be Farmers, Mechanics, or to follow other Industrial pursuits. As a foundation for each course of study, and for success in daily life, the first object is to make every student an expert in the use of the English Language as an art; and, also, an expert in Practical Mathematics, including skill in the use of numbers; in the use of lines, or Industrial Drawing; and in Book-keeping.

FARMER'S COURSE.

Building on this foundation, the special object of the Farmer's Course is to give the student a practical knowledge of the structure, growth, and value of Plants; of light, heat, and moisture; and of Inorganic, Organic, Analytical, and Agricultural Chemistry, as these are related to Plant and Animal Growth; of Economic Zoology; and particularly of Practical Agriculture and Horticulture, including such instruction and drill in the Field, in the handling of Stock, in the Nursery, and in the Wood and Iron shops, as will enable the graduate to perform readily each of the varied operations of actual Farm Life. The Farmer's Course is the leading one of the Institution.

MECHANIC'S COURSE.

To Mechanics, in addition to the studies of the Farmer's Course, applied Mathematics and Industrial Drawing are more extensively taught. Besides this literary education, the student is taught daily in the particular work-shop of his trade. Special advantages are thus offered to those who wish an education as a Carpenter, Cabinet-maker, Wagon-maker, Blacksmith, Turner, Carver, or Engraver. No charge made for the use of tools or materials for class practice.

WOMAN'S COURSE.

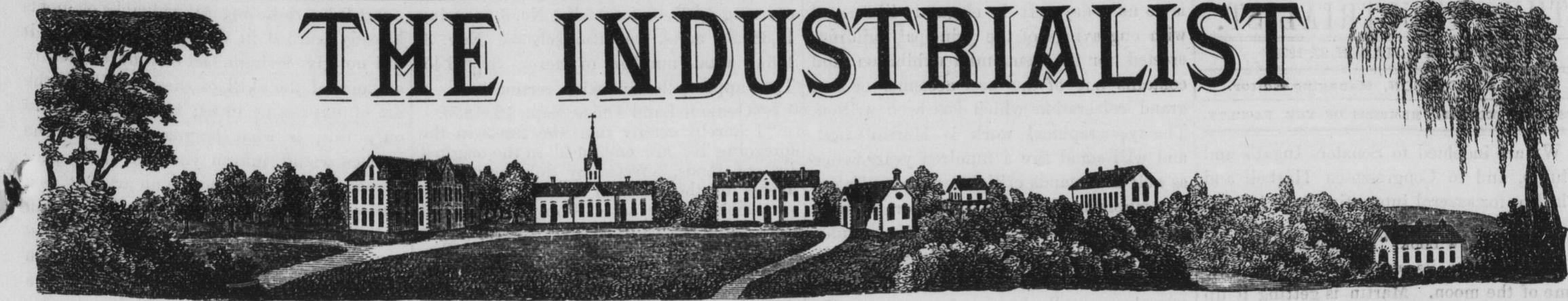
The course of study for woman is more practical and, therefore, more sensible than that found in any other institution in the United States. The studies are shaped with reference to the liberal and direct education of woman as a woman instead of as a man, and as an industrialist instead of a butterfly. Among the special features of the course are Physiology and Special Hygiene, Household Economy, Farm Economy, Gardening, Household Chemistry, etc. The work-shops include those of Millinery and Dress-making, Printing, Telegraphy, Scroll-sawing, Carving, Engraving and Instrumental Music.

TUITION ABSOLUTELY FREE! No contingent fees, except for use of pianos and organs in the Musical Department; and a charge of \$1.00 per month for material and instruments used by male students in Printing and Telegraph Departments. Boarding ranges from \$2.75 to \$4.00 per week.

CALENDAR:—Fall Term began August 23d, and closed December 20th, 1877. The Spring Term began January 3d, and will close May 22d, 1878.

For further information, apply to JNO. A. ANDERSON, President.

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, MARCH 23, 1878.

No. 49.

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J. E. PLATT, Prof. Elem'y English, Mathematics.
JNO. D. WALTERS, Teacher Industrial Drawing.
HON. D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MISS CARRIE STEELE, Teacher Instrumental Music.

POLICY.

On the first day of April, 1873, and in accordance with an Act approved March 6, 1873, a new Board of Regents assumed control of the Kansas State Agricultural College. During that summer radical changes were made in the management and methods of the Institution, and on September 3, 1873, the Board officially announced its purposes in the following words:

"For the purpose of defining the policy of the Board of Regents of the Kansas State Agricultural College, and as a guide to the Faculty in preparing a new curriculum:

"Resolved, That the object of this Institution is to impart a liberal and practical education to those who desire to qualify themselves for the actual practice of agriculture, the mechanic trades, and industrial arts.

"Prominence shall be given to agriculture and these arts in the proportion that they are severally followed in the State of Kansas.

"Prominence shall be given to the several branches of learning which relate to agriculture and the mechanic arts, according to the directness and value of their relation."

During the past four years this line has been strictly followed, not merely in profession, but in spirit and fact. The course of instruction, which as certainly determines the direction of the student's progress as do the iron rails the direction of a train's movement, has been rebuilt and fully conformed to this policy. The several departments of instruction have been entirely reconstructed; and are manned by able and enthusiastic specialists, harmoniously working with brain and hand for the speediest attainment of the designated object. To the outer limit of the facilities at their disposal, both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which is of most value to those who expect to earn a livelihood by farming or the other industrial vocations.

A party of gentlemen may agree to visit foreign countries, and, by using proper means, execute their purpose. On returning, they may state, without vanity or egotism, that they had procured valuable articles which were the only ones of the sort in this country. It is in exactly this and no other spirit that, in speaking of the progress made in developing the policy adopted by the Board in 1873, we claim that Kansas has an Agricultural College which differs radically and advantageously from all other institutions in the United States; that it furnishes a mental education having less superfluous bosh and possessing more real value to the boys and girls who will have to make a living by working, than can be obtained elsewhere; that it affords a mental discipline equal to that of any other institution; and that it gives a manual training which cannot be found elsewhere.

INDUSTRIAL EDUCATION.

The real value of an education to the student depends upon two things: First, the practical worth of the knowledge taught; and, second, the degree in which he makes it his own. Hence, the ability of any institution to give a practical education depends upon the kind and aim of the knowledge it teaches, and upon the thoroughness of the instruction therein. The State Agricultural College was directly endowed by Congress, and is guided by the State, for the specific purpose of furnishing to the industrial classes of Kansas a "practical" education, that is, "one fit for use." As its name indicates, and as the statistics of the industries of the State require, its chief work must be that of giving a useful and usable education to those who will engage in farming; and, therefore, the Farmer's Course must, from the nature of the case, be its main one.

FARMER'S EDUCATION.

Words and figures are merely instruments with which to record ideas. They are not themselves ideas, nor should they be made the chief end of an education. As a wagon is necessary to haul grain, so are they a necessary part of an education; but as the wagon is not the grain, so they are not the knowledge which the farmer converts into money. Hence, the classics and higher mathematics are not taught. But it will be noticed in the following course that so soon as the pupil acquires working skill in the use of the English language as a tool, and of figures and lines as mathematical tools, those arts and sciences which present knowledge that has a cash value to the farmer are taught as rapidly as their importance and thorough acquisition will permit. Studies numbered (1) and (4) in the second, third and fourth years are the spine of the course, to which the others are as ribs and muscle. Explanatory details will be found in subsequent columns:

FARMER'S COURSE.

FOURTH YE'R	THIRD YE'R	SEC'D YE'R	FIRST YE'R
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Drill in English.	1. Drill in English.	2. Drill in Arithmetic.	1. Drill in English.
2. Rhetoric.	2. Algebra.	3. Industrial Drawing.	2. Rhetoric.
3. Practical Agricul. (elementary).	3. Algebra.	4. English Structure.	3. Industrial Drawing.
4. Physics.	4. Practical Agricul. (elementary).	5. English Structure.	4. English Structure.
5. Industrial Drawing.	5. Botany, Entomology.	6. Industrial Drawing.	5. Industrial Drawing.
6. Industrial Drawing.	6. Botany, Entomology.	7. Industrial Drawing.	6. U. S. History, Industrial Drawing.
	7. Botany, Entomology.	8. Industrial Drawing.	
	8. Practical Geomtry.	9. Industrial Drawing.	
	9. Horticultural, Landscape Gardening.	10. Industrial Drawing.	
	10. Organic, Analytical Chemistry.	11. Industrial Drawing.	
	11. Practical Surveying.	12. Industrial Drawing.	
	12. Industrial Drawing.	13. Industrial Drawing.	
	13. Industrial Drawing.	14. Industrial Drawing.	
	14. Industrial Drawing.	15. Industrial Drawing.	
	15. Industrial Drawing.	16. Household Economy.	
	16. Household Economy.	17. Household Economy.	

WOMAN'S EDUCATION.

Nearly one-half of our students are females, and the Woman's Course is prepared expressly for their liberal and practical education. We have no doubt whatever that practical men and women, who understand what it means and what it seeks to do, will fully endorse it. For details see synopsis given by the several departments:

WOMAN'S COURSE.

FOURTH YE'R	THIRD YE'R	SEC'D YE'R	FIRST YE'R
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Drill in English.	1. Drill in English.	2. Drill in Arithmetic.	1. Drill in English.
2. Rhetoric.	2. Algebra.	3. Industrial Drawing.	2. Rhetoric.
3. English Literature.	3. Algebra.	4. English Structure.	3. Industrial Drawing.
4. Physics.	4. Practical Agricul. (elementary).	5. English Structure.	4. English Structure.
5. Industrial Drawing.	5. Botany, Entomology.	6. Industrial Drawing.	5. Industrial Drawing.
6. Household Economy.	6. Botany, Entomology.	7. Industrial Drawing.	6. U. S. History, Industrial Drawing.
	7. Botany, Entomology.	8. Industrial Drawing.	
	8. Practical Geomtry.	9. Industrial Drawing.	
	9. Horticultural, Landscape Gardening.	10. Industrial Drawing.	
	10. Organic, Analytical Chemistry.	11. Industrial Drawing.	
	11. Practical Surveying.	12. Industrial Drawing.	
	12. Industrial Drawing.	13. Industrial Drawing.	
	13. Industrial Drawing.	14. Industrial Drawing.	
	14. Industrial Drawing.	15. Industrial Drawing.	
	15. Industrial Drawing.	16. Household Economy.	
	16. Household Economy.	17. Household Economy.	

MECHANIC'S EDUCATION.

The number of students received during our day who have really purposed to become mechanics, and, therefore, who were justly entitled to a special course preparatory thereto, has been relatively very small. In view of this fact, and of the present resources of the Institution, together with the adaptedness of the leading course to the wants of the intelligent mechanic, it has been found practically unnecessary to diverge from the Farmer's Course. Additional studies, specially adapted to the mechanic's use, will be furnished in a Post-Graduate's Course. But the above course, as it stands, and in the order of its standing, will be followed by all male students.

If it be urged that the distinctively agricultural knowledge taught in the Farmer's Course is not directly valuable to the mechanic, we reply that, admitting the point for the purpose of argument, yet: 1. This knowledge is of more practical value

to the mechanic than is the Latin, Greek, or a half dozen other things embraced in the usual course preparatory to the professions; 2. That the great majority of Kansas mechanics will also be more or less engaged in agriculture; 3. That those studies in the course which are directly valuable to the mechanic, together with the shop facilities, offer a better mechanic's education than can be elsewhere found west of the Alleghanies.

INDUSTRIAL DEPARTMENTS.

Having knowledge in the head is one thing; ability to use it with the tongue, fingers or feet is quite another thing. Both are vital to success in practical life. A man might thoroughly understand the theoretical principles of carpentry, and yet, not having used the tools, be wholly unable to earn carpenter's wages. So in all other vocations. Accordingly, instruction is given in the following well-equipped Industrial Departments, and every student is required to recite in some one of them, as selected by the pupil or parent:

FOR MALE STUDENTS.

The Farm.	Dress-making.
The Nursery.	Printing.
Carpentry.	Telegraphy.
Cabinet-making.	Scroll-sawing.
Turning.	Carving.
Wagon-making.	Engraving.
Painting.	Photography.
Blacksmithing.	Instrumental Music.

Each of these departments is conducted exactly as in daily life, and aims to give precisely the drill received by an apprentice. No charge is made, either for tuition or material, from male students taking the Industrials provided for them; nor from female students taking the ones provided for them, except in the Department of Instrumental Music, where the usual fee is assessed for the use of pianos or organs. Male students taking either Printing or Telegraphy are charged \$1 per month for the use of material and instruments.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PRACTICAL AGRICULTURE.

Second Year:—General principles of breeding; history and characteristics of breeds; adaptation of different breeds for special purposes and localities; implements of simple tillage; mechanical principles involved in their construction; action of the plow upon soil and subsoil; principles of draught; influence of different adjustments upon draught; use of the dynamometer; value of hoed crops in a system of husbandry; the cultivation of corn and roots; soils that need drainage; how to lay out a system of drains; house drainage; sewerage.

Fourth Year: General view of agriculture, ancient and modern; agricultural progress of the last century; relative advantages of mixed husbandry and special farming; the selection and arrangement of the farm with reference to the system to be pursued; rotation of crops; general advantages of a rotation; the best rotation with reference to disposition of labor, production of manure, and extermination of weeds; pasturage and production of grain and forage crops; manures, how best housed and applied; composting manures; commercial fertilizers; systems of feeding; stall feeding; steaming food; soiling; experiments in feeding; farm buildings; farm-houses; barns.

FARM ECONOMY.

Woman's Course, Fourth Year: Dairy products as human food; influences affecting character of milk; manufacture of condensed milk; the factory system and household plan of cheese-making; treatment of rennet; general process of cheese manufacture; subsequent treatment of cheese; butter-making; creameries; "deep" and "shallow" setting systems; general process of butter-making; packing and preserving butter.

DEPARTMENT OF BOTANY AND PRACTICAL HORTICULTURE.

This department embraces a course of instruction in the elements of botany, structural and systematic, with a constant attention to the practical application of botany to the farm, orchard, garden, nursery and forest; also a course of lectures on Landscape Gardening. The instruction is mainly given by lectures, accompanied by regular practical drill in all the work of the fruit, vegetable and flower gardens, nursery, orchard, vineyard and ornamental grounds.

The lectures in Practical Horticulture embrace the following and kindred subjects: The relation of atmospheric motion, moisture and temperature to horticulture; seeds, the means of collecting and preserving; propagation, by seeds, cuttings, layers, suckers, grafting, budding; care of young plants; improvement of varieties; management of commercial and farm nursery; modes of pruning; the orchard; fruit suitable for orchard and garden culture; the flower, vegetable and fruit garden; importance and mode of forest culture; shelter belts and their influence; weeds and useful plants; noting the species of trees worthy of culture, either for profit or ornament.

LANDSCAPE GARDENING.

The lectures on Landscape Gardening not only unfold the accepted principles of the art, but at the same time give special attention to such applications of the art as may be made universally available in laying out and improvement of farms and

the homes of the people. These lectures are accompanied by a practical drill in the work of laying out and plotting grounds topographically.

CHEMICAL DEPARTMENT.

PHYSICS.

This includes a full consideration of the laws of mechanics, of liquids, gases and vapors, weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life. Text-book, Ganot.

INORGANIC CHEMISTRY.

This course is opened with a careful study of chemical forces and the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially with regard to their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.

This comprises a thorough study of the chemistry of organic compounds, the composition of plants and of the various compounds derived from them. Constantly accompanied by laboratory practice.

CHEMICAL ANALYSIS.

In this course each student is furnished his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, mineral waters, commercial compounds, etc. After completing this course, he enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.

This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crops Feed."

METEOROLOGY.

Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken under direction of the Signal Service. Text-book, Loomis' Meteorology.

MINERALOGY.

This includes the study of the laws of crystallography, with the properties, forms and uses of the principal minerals of

THE INDUSTRIALIST.

SATURDAY, MARCH 23, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

WE are indebted to Senators Ingalls and Plumb, and to Congressmen Haskell and Phillips for several interesting speeches.

PRENTIS' new book, "A Kansan Abroad," ought to make its appearance about this time of the moon. Martin is getting it up in double first-class style, and as the matter is double first class we are eager for the enjoyment of reading it.

THE demand for our last catalogue has exhausted the edition, and to supply the increasing applications for information concerning the College, we give a reprint of that document on the outside, except the list of students and statistics. Those who have sent for a catalogue during the last ten days will please accept the reprint instead, and understand the cause of delay in replying to their favors. And those hereafter receiving copies of this issue in answer to requests for catalogues, will readily see in the above the reasons therefor.

Corn Smut.

This fungus affecting Indian corn is known to cryptogamic botanists as *Ustilago Mayidis*,—not *segetum*, as stated by Commissioner LeDuc in his letter to Congressman Phillips, published in the last Kansas *Farmer*. Dulong's analysis, quoted by General LeDuc, was made some sixty years ago, and has been the only analysis heretofore on record. It is of course understood that what is popularly termed smut is simply the mass of spores of the fungus itself, and which correspond to the seed of phenogamous plants. The following analysis of smut has just been completed:

Water	12.316 per cent.
Organic matter:	
Carbohydrates (starch-like)	65.955 per cent.
Albuminoids (nitrogenous)	16.547 per cent.
Oil	1.680 per cent.
Mineral matter:	
Phosphate of magnesium,	
Sulphate of lime,	
Phosphate of lime,	
Chloride of potassium,	
Phosphate of potassium,	
Chloride of ammonium,	
Silica,	
Oxide of iron,	
Total	100.000 per cent.

For a full consideration of this subject of corn smut as a suspected poison, the reader is referred to the report of the Secretary of the State Board of Agriculture for the current year.—*Prof. Kedzie.*

Kansas Report.

The Fifth Annual Report of the State Board of Agriculture is one of the most valuable works ever issued by any State. It is crowded with statistics for the benefit of those desiring details; and, for the benefit of the general reader who has not the inclination to compare figures, the results are also given by "line exhibits," so that in a glance any one can read the story of the wonderful growth and condition of Kansas by counties, crops or industries. The maps are clear, accurate and conveniently arranged, rendering a reference to any quarter-section the work of a moment; and the matter is terse, comprehensive and precisely what the reader wishes. Each year Secretary Gray does better than which was admirably done before; and in reading the successive reports by the Board, we always find ourselves wondering how its predecessor could have been so improved upon.

The report of the Centennial Managers, also in this volume, is an invaluable historic document, and will be as interesting to the antiquary one hundred years hence as it

is to us to-day. It is elegantly illustrated with engravings of the principal buildings erected for the Centennial exhibition, and contains one of the best accounts of that grand celebration which has been written. The typographical work is Martin's best, and will stand fire a hundred years hence as well as it stands criticism to-day. Taken as a whole and in detail, the report is most admirable; and whether now or in grander decades to come, the most enthusiastic Kansan can confidently await the judgment of any class or all classes of men upon the evidence presented in this volume. Considering the youth of the State, the hard times, and limited means possessed by the Board, the book is a surprise and joy.

And considering the difficulties through which that Board has passed, and the effect upon immigration which its labors have had, he must be a singular man who can withhold the highest praise from its actors. Not less than 150,000 persons will settle in Kansas this year. No one can definitely say how many wild acres will be turned into productive farms, or how much wealth of either cash or spirit this grand army will add to the property or power of the State. Nor can any one say what the effect of this increased population and wealth will have upon Kansas during even the next ten years. But every one who has the least knowledge of the causes which have produced an immigration the like of which this State has never before seen, very well knows that the Kansas exhibit at the Centennial and the previous and subsequent work of this Board, have been the chief and constant forces. If States are to be governed by the same rules of investment that the shrewdest business men follow, then are the appropriations made by Kansas for this work, the wisest and most profitable investments that could have been made. And as we look back to these years of struggle, the regret will find place in the hearts of thinking Kansans that a larger liberality had not enabled men who have achieved so much to have won even more brilliant successes for Kansas.

Concerning the College Lands. No. I.

With your permission, MR. INDUSTRIALIST, I will give to your readers, in a series of brief articles, some facts concerning the lands donated by the general government to the Kansas State Agricultural College. In the office of the Auditor of State, there is a document, plain and simple, and neither tied nor ornamented with red tape. It reads:

"List of Lands selected for the State of Kansas by Johnson Clark, P. B. Maxson and Daniel Mitchell, duly authorized agents of the said State, in pursuance of an act of Congress, approved July 2d, 1862, entitled 'An Act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts,' said lands being subject to be selected for the said purpose, and found to be free from conflict."

[Selected in Junction City District.]

CERTIFICATE.

"General Land Office, Oct. 3, 1865

"I, James M. Edmunds, Commissioner of the General Land Office, do hereby certify that the annexed, from pages one to eight inclusive, is a true and literal exemplification from the original on file in this office.

"In testimony whereof I have hereunto subscribed my name, and caused [L. S.] the seal of this office to be affixed, at the city of Washington, on the day and year above written.

J. M. EDMUNDS,

Comm'r of the General Land Office."

Here follows eight pages of descriptions, in three distinct lists. List No. 1, covering 70,305.21 acres, was selected July 18, 1863; list No. 2 was selected November 3, 1864,

covering 4,325.40 acres; list No. 3, covering 15,365.84 acres, was also selected Nov. 3, 1864; total number of acres, 89,996.45. Then appears the following certificate:

"General Land Office, Sept. 13, 1865.

"I hereby certify that the tracts in the foregoing list are embraced in the original lists of lands, selected by duly authorized agents of the State of Kansas, under the provisions of the act of Congress approved July 2d, 1862, entitled 'An Act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts,' which original lists are now on file in this office.

"And I further certify that the same has been carefully examined and compared with the township plats and tract books of this office, and is found to be free from conflict; and I respectfully recommend that the same be approved, subject to any valid interfering rights which may have existed at the date of selection. JOSEPH S. WILSON,

Acting Commissioner.

"Department of the Interior, Sept. 16, 1865."

"Approved, subject to the rights above mentioned. JAMES HARLAN,

Secretary."

Such is the authority that set apart the lands selected by the agents of the State of Kansas, and the foregoing certificate, on file in the State Land Office at Topeka, is the original title obtained by the State, and on this is based the patents issued from time to time, over the "great seal of the State," for the several tracts as payment is made in full for them by the purchaser.

It has been suggested in some quarters that the foregoing document should be recorded in the several counties where the lands are located, but such record is held to be unnecessary; and the State of Kansas in its sovereign capacity conveys the perfect title, obtained through the certificate, as fully as does the United States in any of its patents.

Not to make this article tedious, I close, but will resume in your next issue, and give the descriptions of lands selected as in the lists, or else as now bounded by the counties in which they are located.

L. R. ELLIOTT.

March 21, 1878.

Every-Day English.

Please be so kind as to suppose that you individually held the same relation to the pupils in the common schools which the State holds; that you had furnished the endowments from your personal property, and that, while you are not conducting the business of public education for the purpose of receiving a profitable return in the shape of dollars, you were conducting it for the purpose of receiving the best profit in the shape of the actual value of that mental power, skill and civic ability supposed to be acquired by these pupils from this instruction.

You would find from the expenditures that it cost you over \$300,000 to teach reading, writing and simple grammar, and in addition, over \$200,000 for higher grammar; or over half a million a year for instruction in the English language. This sum might startle you, especially when you found how few of the pupils could either spell or speak every-day English correctly; and it might strike you that perhaps \$300,000 should furnish thorough instruction in the alphabet, in the formation and meaning of words, in the service performed by the verbs, nouns, etc., of a sentence, in the change of prefix or suffix, in the clearness given to an idea by the use of points, and still furnish that thorough drill by which alone the pupil acquires skill in the use of words as tools.

At any rate you would ask what cash profit was given to children under fourteen by the \$200,000 worth of higher grammar. Picking up a text-book you might find that,

apart from re-stating the valuable elements already learned in the simple grammar, it did not give a single fact or hint that really augmented the skill of these pupils in the art of expressing ideas; and yet this, and only this, is what language is for. The preface would inform you that the author treated of language, not as an art, but as a philosophic science, and would claim that in order to acquire skill in the art one must master the science. This latter assertion seeming reasonable, you would read page after page, large print and small, of rules that are more numerously proven than ever rules were before, if "the exception proves the rule," until you found yourself lost in the ramifications of a system more confusing than the ancient labyrinth. And you might conclude that if it be necessary to go through all this in order to speak correctly one's native tongue, the sum of \$200,000 isn't enough — better make it \$200,000,000. But then you would remember that the best way to study any science is under the guidance and inspiration of the practice of its art. Men travel first and make geographies afterwards. Languages were in use centuries before grammars were written; and the most perfect language of antiquity, the Greek, was perfected before its study by the Romans necessitated a grammar.

You would close the book — possibly with the thought that its author was one of those minutely systematic persons with whom a mysterious Providence occasionally vexes the race; a man whose soul delights in splitting unimportant principles into valueless details; in classifying, sub-classifying, dividing sub-classes, sub-dividing subdivisions of sub-divided sub-classes. All of which would suggest those classic lines of the poet, so soothing to bitten humanity:

"Big fleas have little fleas, and these have smaller fleas to bite 'em;
These fleas have lesser fleas, and so — ad infinitum."

And your imagination would instinctively depict the author of such a grammar, armed with a breech-loading microscope as big as one of the Great Eastern's boilers, creeping out on the farthest verge of possible sub-analysis, balancing himself on the very tip-end of "infinitum" projected over chaos, and tragically exclaiming to the terrified ghost of a murdered but uncaptured detail:

"Is that a dagger which I see before me?
Come let me clutch thee!
I have thee not, and yet—I see thee still!"

We once knew a man of just that sort. He lived in Boston — but there was plenty of room left. He was one of those mental machines made up of pigeon-holes tied together with red tape, and covered all over with stiffly-written labels underlined with blood-red ink. Don't know who made him. He sported a larger and more multitudinously variegated assortment of canes than any man in Boston. And so exquisite was his polished "culture" that a hair on his head would no more think of crossing the line of another hair than the south pole would think of kinking itself around the north pole. He pronounced "neither" "ny-i-ther," and parted his hair in the middle. That man had his kindling wood sawed and split according to plans and specifications. The sticks were of the same length, of as nearly the same thickness as is possible in fine-hand splitting, and devoid of splinters. These sticks were neatly tied with black tape — (contrast), in bundles of uniform size, which were piled in his cellar lengthwise due east and west — the attraction of the gas pipe on the magnetic needle being calculated. Did his kindling start a fire any quicker or burn any better because of its "systematic arrangement?" And isn't this ability the only real value that kindling possesses? Did all this pay? Could you afford to spend \$200,000 a year for a "systematic arrangement" of fancy English, made upon equally finical principles by detail-hunting hobbyists? And yet many of the grammars are quite as absurd and worthless as the "systematic arrangement" of that kindling wood. But enough has been said to illustrate the mode of determining the practical worth of the several branches found in our schools.

[Concluded from first page.]

Text-books: Webster's Academic Dictionary; Lee & Hadley's Advanced Lessons in Language. Pupils deficient in spelling, etc., should enter the printing class, the printing-office being the work-shop of language.

STRUCTURE OF ENGLISH.

ELEMENTS OF ENGLISH.—The end aimed at in this study is to learn everything about words which will aid in their effective use. Among the topics included are:

Roots: What are they; their origin; their force and value as an element of language; the manner of their growth into different parts of speech.

Stems: Their derivation; their offices and properties; their relation to the other parts of words.

Prefices and Suffixes: The several sources whence derived; the relation of their force or significance to those sources; explanation of the laws and principles governing their use along with stems.

Compounds: Their value; their properties and uses; the laws governing their formation.

Synonyms: Definitions; causes of their abundance in English; the principles to be observed in choosing among them, to express a thought.

Criticism: This constitutes a prominent part of the exercises of the pupil through his whole course in the study of English. It not only diversifies and enlivens the class-room exercises, but reduces to practice the principles of the structure of the language. By this means, the student acquires not only a knowledge of English, but readiness, skill and accuracy in speaking or writing it. The exercises in criticism embrace not only examination of selected matter, but original composition.

ELEMENTS OF SENTENCES.—The purpose in view in studying this subject is not to traverse the ground gone over in the study of grammar, but to fix in the mind of the student a clear understanding and remembrance of names, the properties and offices of the several classes of words entering into an English sentence, by showing him the reason of things; to make more simple, as well as interesting and practically useful, a study otherwise "dry and unprofitable" in many cases, by explaining the reason of the verbal forms and changes, the rules and maxims he is to remember and observe in his use of language. In the same manner he is conducted through a study of the mutual relations and dependencies of the several elements making up a sentence.

MATHEMATICAL DEPARTMENT.

Figures and lines, like words, are only instruments with which to convey ideas, or perform operations that cannot be easily done without them. The arithmetical principles used in business are few and simple; but accuracy and rapidity in computation are only gained by practice. College graduates often fail to retain clerkships, not because they do not *why* given operations are performed, but because they can neither add, multiply or divide with that habitual correctness which renders their work reliable.

DRILL IN ARITHMETIC.

The chief design of this study is to make the student expert in the use of numbers, as employed by the industrialist for profit. The occupation of a successful farmer demands the application of every principle of practical arithmetic, and is taken as a starting point, rather than that of an abstract system. Beginning with a simple cash account, book-keeping is gradually developed to the full extent of its real utility. The areas of fields, expense of crops, construction of houses, sales of produce, and investment of capital, involve all the fundamental operations, and those of profit and loss, commission, taxes, insurance, exchange and stocks. Following this line, the student, so far from hammering away at "pure" science draws from the mathematical store-house what he needs, and sees why he needs it. Accuracy of calculation and posting, rather than a *mere* comprehension of the principles, is aimed at. Besides the recitation-room drill in business forms, practice in the field is also given. Estimating the number of cords in a pile of wood said to be 100x4x4 feet is one thing; measuring a pile of wood through which any number of cuts may be harmlessly thrown, and in which four-feet sticks are the exception, is quite another and more difficult thing.

ARITHMETIC AND BOOK-KEEPING

Is a continuation of the above, having the same purpose and adopting such methods as the necessities of the class indicate. Thorough instruction in the principles and forms of business law is given. It will be seen that this method of teaching book-keeping, besides ensuring arithmetical practice, develops practical skill in that important art.

ALGEBRA.

Algebra is included in the course as a preparation for the study of Surveying.

DRAWING.

The practical value of Industrial Drawing can hardly be overestimated, first, because its study is the best drill for the development of the perceptive faculties, which are the ones most employed in daily life; and, second, because the working classes make a far greater use of lines than they do of figures. A farmer follows a line when laying a straight furrow; the carpenter uses the square and rule twenty times as often as he does figures; and a woman in cutting a pattern, or deciding that one bonnet is prettier than another, does so by the line or "form." So that either in its direct application, or in the exercise of that taste which comes from skill in using lines, this branch of mathematics is quite as important as a means of "mental discipline" as is the branch of computation, and is of far greater daily use. The Admiral system of Prof. Walter Smith, Art Director of Massachusetts, is thoroughly followed through the grades of Free-hand, Geometrical, Object, Model, Perspective, Mechanical and Topographical Drawing, during the terms indicated by the Course of Study. In addition, constant practice in the application of lines to metal and wood is furnished in the Blacksmith, Carpenter, Turning, Scroll-sawing, Carving, Engraving and Printing shops, and to fabrics in the Sewing Department.

PRACTICAL GEOMETRY.

Not one farmer in a thousand ever uses the transit in surveying his land, the testimony of the county surveyor being decisive in court; but every farmer makes countless applications of lines and angles in laying off fields, roads, gardens, and angles in the planning of houses, determining levels, etc. The object of Practical Geometry is to teach the properties and uses of angles, and to make the student

skillful in the application of lines to the field by the use of such simple instruments as are always within reach, or within his ability to construct; and accurate in the transferring of plans to the grounds, board or block.

PRACTICAL SURVEYING.

The drill in the use of figures and lines given by the mathematical course as above indicated renders the mastery of surveying an easy task. There is no calculation made or formula used by the working engineer which cannot be readily understood and performed by a skillful arithmetician after proper instruction. The hand-book of the engineer is accordingly supplemented with such special guidance as is found necessary for a full comprehension of the mathematical principles and their applications; and extended field practice is required in the use of the compass, level, transit and theodolite.

STUDIES SPECIAL TO WOMAN.

Besides the studies already indicated, attention is called to the following:

SPECIAL HYGIENE.

As shown in the course, one term is devoted to the study of Physiology, from the text-book of Dr. J. C. Dalton. This is followed in the fourth year by a course of lectures to young ladies by Mrs. Cripps on the subject of Hygiene, embracing such applications of physiological truths and such instruction in hygienic matters as are valuable to women.

FARM ECONOMY considers those affairs of the farm which usually come under the supervision of the farmer's wife or daughter, and which are not included in "gardening" or "household economy," such as butter and cheese-making, dairy management, etc. A course of lectures is delivered by the Professor of Practical Agriculture. See heading, "Farm Economy."

GARDENING is included in Practical Horticulture. See heading, "Landscape Gardening."

HOUSEHOLD CHEMISTRY. See heading, "Household Chemistry."

HOUSEHOLD ECONOMY

Follows Household Chemistry and consists of lectures by Mrs. Cripps on the art of house-keeping, embracing cookery, domestic management, and kindred topics. Many elderly gentlemen sufficiently know, and more young gentlemen will duly discover, that systematic knowledge of how cooking ought to be done is luminously different from the ability to do it. Instruction without practice can effect but little. Accordingly, a kitchen laboratory has been completely furnished, and affords every facility for drill in the art of cooking. This drill chiefly differs from that of a kitchen in the respect that after a girl has learned to wash dishes or pare potatoes she is not kept everlasting-ly at either. After full trial we have found it just as feasible to give this practice, with profit and pleasure to the pupil, as it is to give laboratory practice in chemistry—and no more expensive.

GENERAL INFORMATION.

BUILDINGS.

Old College Building.—Stone, three stories, 40x60, nine rooms, used for library, cabinet, and dormitories. One mile distant from following:

College Building.—Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the Literary Departments.

Laboratory.—Cross form, 109x109, one story, stone, containing a lecture room, office, balance room and four large laboratories.

Horticultural Building.—Stone, one story and basement, 31x80, five rooms for recitations, workshop, etc.

Mechanical Building.—Stone, 38x102, two stories, seven rooms, containing Wood Shops, Printing, Telegraph, Sewing and Instrumental Music Departments.

Barn.—Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc.

BLACKSMITH SHOP.

Blacksmith Shop.—Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.

A Farm of 185 acres, thoroughly equipped and cultivated. Shorthorn, Devon, Jersey and Gallo- way cattle; Berkshire and Essex swine; etc., etc.

A Nursery of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyards, small fruits, etc.

The Chemical Department, with its new Laboratory and appliances, is practically equal to any in the United States.

The Mechanical Department has twenty-five kits of carpenter's tools; lathes, scroll-saws, etc.; and a well-furnished blacksmith shop.

The Sewing Department is well equipped with machines and appliances.

The Mathematical Department is supplied with the appliances necessary for study and practice in surveying.

The Printing Department has twenty-six pairs of cases; presses, etc.

The Telegraph Department has four miles of line, twenty-five instruments, and every facility for practical instruction.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

Educational Labor.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational, and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

Remunerated Labor.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as its own interests require, and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

RULES.

1. Behave as a true man or woman should, at all times and in all places.

2. Attend to your own business promptly, thoroughly and courteously; and vigorously let alone that of other people.

3. Penalty: "Leave!"

CALENDAR.

Spring Term 1878.—Began Thursday, Jan. 3d, and will close Wednesday, May 22d.

Full Term 1878.—Begins Wednesday, September 4th, and closes Wednesday, December 20th.

PUBLICATIONS.

The "Hand-Book," published in 1874, containing a full discussion of the educational question and the aims of the Institution, will be forwarded to any one desiring it.

THE INDUSTRIALIST.—A weekly journal edited by the Faculty and published by the Printing Department, contains original and seasonable articles on the Farm, Orchard, Trades, Sciences, and Education. Price, 75 cents a year. Address A. A. Stewart, Manhattan.

TO NEW STUDENTS.

Bring the text-books you have been using. On

arrival, first arrange for your boarding. A. A. Stewart, Supt. Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

TELEGRAPHY.—Four miles of line, twenty-five line instruments, and daily instruction and drill by an experienced operator.

GARDENING FOR PROFIT.—Instruction and drill in Kansas Horticulture. The Nursery, Orchard, Vineyard, Vegetable Gardening, Flower and Landscape Gardening, and Kansas Forestry.

EDUCATIONAL CALENDAR.—A wide-awake, spicy, newswy, Kansas paper for the Officers, Teachers and Patrons of Kansas schools. Published monthly for only twenty-five cents a year. Send for sample copy, and say that you saw this advertisement in the INDUSTRIALIST. Geo. W. Martin, Topeka.

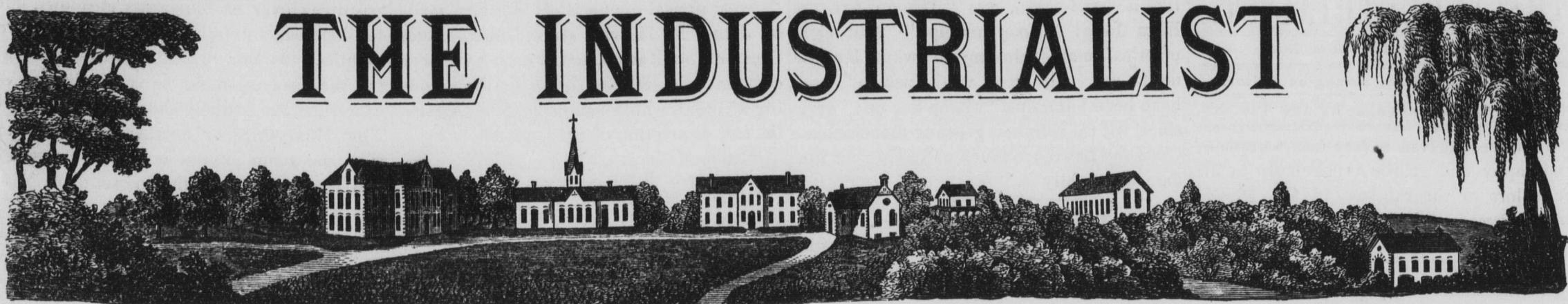
HABITS OF PLANTS.—Thorough instruction in Vegetable Physiology; tracing the development of the root, stem, bud, leaf, flower and seed. Careful study of cereal grains, grasses, and other food-plants, and of native and foreign weeds. Special attention paid to the habits and best methods of preventing or destroying insects inimical to the Kansas Farmer.

MATHEMATICS.—Practical, direct and thorough drill in Arithmetic, Book-Keeping, Industrial Drawing, Algebra, Geometry, Trigonometry, Surveying, Mechanics and Engineering. Work in Field, with Tape Line, Chain, Compasses, Transit and Level. The course is shaped for the benefit of the farmer, mechanic, or business man, rather than for the benefit of the astronomer.

SPECIAL FOR WOMAN.—Special lectures on Farm Economy, by Prof. Shelton, discussing the Dairy, Poultry, etc. Gardening, by Prof. Gale, treating of the vegetable, flower, commercial and ornamental. Household Chemistry, by Prof. Kedzie, consisting of the chemistry of cooking, bread, tea and coffee, butter, cheese, dyeing and coloring, bleaching, disinfectants, ventilation, etc. Special Hygiene, by Mrs. Cripps.

CLUB RATES.—The regular price of the *Kansas Farmer*, an eight-page weekly, edited and published by Major J. K. Hudson, Topeka, Kansas, is two dollars per year; and that of the *American Young Folks*, a sixteen-page monthly, same publisher, fifty cents a year. We will send to any address, for one year, the *Farmer*, the *American Young Folks* and the *INDUSTRIALIST* for \$2.75; or the *Farmer* and *INDUSTRIALIST* for \$2.25; or the *American Young Folks* and the *INDUSTRIALIST* for \$1.0

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, MARCH 30, 1878.

No. 50.

THE INDUSTRIALIST.

Published every Saturday by the
PRINTING DEPARTMENT
OF THE

KANSAS STATE AGRICULTURAL COLLEGE.

TERMS OF SUBSCRIPTION, 75 cents per year, postage prepaid. Ten cents per month, postage prepaid. Payment absolutely in advance! Paper stopped at expiration of subscription. Address A. A. STEWART, Manhattan, Kas.

PRESS NOTICES.

The INDUSTRIALIST, of the Agricultural College, Manhattan, has a new head—a bright, cheery looking one, well adapted to the spirit of the paper.—*Pawnee County Herald*.

The INDUSTRIALIST, published at the Agricultural College, has new head, which is also a panoramic view of the College. If possible the change makes the little paper appear more attractive than ever.—*Burlington Independent*.

That prettiest of all Kansas papers, the INDUSTRIALIST, published under the auspices of the Agricultural College, Manhattan, has a new and decidedly pretty head illustrative of the College grounds and buildings.—*Hiawatha Herald*.

The INDUSTRIALIST has a new and unique head, representing the College grounds and buildings. It is a wide-awake paper. We always thought Jno. A. Anderson was a born editor,—and we hold to the same opinion still. Success.—*Kansas Gazette*.

The spicy little paper, the INDUSTRIALIST, is published at Manhattan, in the interests of the State Agricultural College, and comes to hand with a brand new pictorial head, and is as happy over it as a boy with new boots. It is offered to teachers three months free. Send your address.—*Winchester Argus*.

The INDUSTRIALIST, published at Manhattan, in the interest of the Agricultural College, came to hand this week adorned with a new heading and otherwise improved. The INDUSTRIALIST has done much toward working up patronage for the College, and deserves a liberal support.—*Human Inter-State*.

The Agricultural College of Kansas, located at Manhattan, is recognized as the leading educational institution of the kind in the West. Young men can secure a thorough and practical education at that College. The President, Mr. John A. Anderson, is the best instructor in the West.—*Morris County Herald*.

The INDUSTRIALIST, published at Manhattan, Kan., comes to us this week more beautiful than ever. The heading shows all of the College buildings, which adds much to its looks. This paper merits a place in the literature of each teacher in the State. Teachers, send for it. Two months free.—*Chautauqua News*.

The last Manhattan INDUSTRIALIST came to hand with a new head representing the buildings belonging to the Agricultural College, which are very nice and attractive. Although the paper has a new head, the old brains yet give expression to the choicest wit and wisdom to be found in the State press; and "long may it wave" and flourish.—*Neosho County Journal*.

The Manhattan INDUSTRIALIST came out last week with a neatly-engraved head, showing the location of the State Agricultural College grounds and buildings. The engraving is good, and any one who has ever been at Manhattan will recognize the different buildings. But we honestly think the old heading looked better than the new, the latter being too large for the size of the paper.—*Topper Times*.

The INDUSTRIALIST, published at the Agricultural College, Manhattan, comes to us this week with a brand new head, giving a fullview of all the College buildings, and more trees than we ever dreamed of seeing on the College farm. But Stewart says that this is a fine year for trees. The INDUSTRIALIST is ably edited by President John A. Anderson, and is one of the neatest printed papers in the State.—*Jewell County Diamond*.

The INDUSTRIALIST has a new "head put on it," which the same is highly ornamental, and over which the INDUSTRIALIST puts on several airs. The design, we take it, represents in the center foreground a German farm-house, and near it a country school-house of very tasty pattern. On the left is a very neat village school-house, and on the right, shaded by a stately willow and embowered in hazel-brush, is that wonderful and *recherché* barn, of which we have read. No matter, however, what the "head" of the INDUSTRIALIST is, its "heart" is sound as a nut.—*Ottawa Journal*.

Look out, MR. INDUSTRIALIST, you made us say in your issue of the 9th ult., that your Agricultural College "was becoming the boast of all loyal Kansas," when these were not the words at all. There is a marked distinction between "loyal Kansas," what you made us say, and "loyal Kansan," what we said. Loyal Kansas might mean that politically, as a State, we were sound on the "goose question," but loyal Kansan means one who thinks we have the best State, the smartest people, the prettiest girls and the best educational institutions (Agricultural College included) of all the States in the Union. We are loyal Kansans.—*Columbus School Journal*.

Metric System.

Of all the great problems bearing on the progress of civilization, which have in recent times engaged the attention of legislators and men of science, few are more important or far-reaching than that of the unification of weights and measures. To the speedy and complete solution of this problem of universal interest every community is bound to contribute according to its circumstances and ability. * * *

The grand aim of the metrological reform is comprised in the three words, *uniformity, permanency, and universality*; one standard to be the same for all persons and all purposes, and to continue the same forever. Of the importance of this object, said John Quincy Adams, "Uniformity of weights and measures, permanent universal uniformity, adapted to the nature of things, to the physical organization, and to the moral improvement of man, would be a blessing of such transcendent magnitude, that, if there existed upon earth a combination of power and will adequate to accomplish the result by the energy of a single act, the being who should exercise it would be among the greatest benefactors of the human race."

It is generally agreed that a universal system of metrology should possess the following four characteristics:

1. Its base-unit should be a common measure of all its derivative units.
2. That its derivative units should increase and decrease by the decimal or some uniform scale.
3. That its denominations should be expressed by convenient, definite and significant terms; and,
4. That its standard unit should be *invariable* and *indestructible* or *reproducible*.

This ideal perfection exists in the Metric System, which France, acting as the representative of mankind, has invented and offered as a benefaction to the acceptance of all nations.

The two essential principles upon which this system is founded are,—

1. That the unit of linear measure applied to matter in its three forms of extension, viz., length, breadth and thickness, should be the standard of all measures of length, surface and solidity; and, 2. The cubic contents of the linear measures in distilled water at the temperature of greatest contraction, should furnish at once the standard weight and measure of capacity.

The system in substance is this: (1.) The unit of *length*, the *meter*, is the ten millionth part of a quadrant of the meridian of Paris, computed from a trigonometrical measurement of the arc of nine degrees and upwards between Dunkirk and Barcelona, being 39.37 inches, nearly. (2.) The unit of *superficies*, the *ar*, is the square of ten meters, or a hundred square meters. (3.) The unit of *capacity*, the *liter*, is a cube whose edge is a tenth of a meter. (4.) The unit of *weight*, the *gram*, is the weight of a cube of rain-water at its extreme contraction, whose edge is a hundredth of a meter. These four are the primary units of the system, and from these four all others are derived, according to the decimal scale.

The perfection of its nomenclature furnishes one of the most powerful arguments for the adoption of the system. It combines, in the highest degree, uniformity, precision, and significance. The multiples of the primary units are denoted by prefixing to them syllables derived from the Greek language, significant of their increase in decimal proportion. The subdivisions, or decimal fractions of these units, are equally significant in their names, the syllable prefixed being derived from the Latin language. Four of the prefixes for multiplication and three for divi-

sion are all that the system requires. These seven prefixes, with the names of the four base-units, eleven words in all, practically constitute its whole vocabulary; and yet each denomination has a *distinct name*, and each name a *definite meaning*; no two words express the same thing, and no two things are signified by the same word. This nomenclature is not only unrivaled in respect to precision, significance, brevity and completeness, but, being derived from the two ancient classic languages, it becomes cosmopolitan in character. On this point Charles Sumner said: "A system intended for universal adoption must discard all local or national terms. The prefixes employed are equally intelligible in all countries. They are no more French than English or German. They are in their nature *cosmopolitan*, and in all countries they are equally suggestive in disclosing the denomination of the measure. They combine the peculiar advantages of a universal name and a definition. The name instantly suggests the measure with exquisite precision."

Nearly fifty years ago, when this system of metrology was struggling for existence in the country which gave it birth, John Quincy Adams said of it: "The French system embraces all the great and important principles of uniformity which can be applied to weights and measures." "It is a system adapted by the highest efforts of human science, ingenuity and skill, to the common purposes of all. Considered merely as a labor-saving machine, it is a new power offered to man, incomparably greater than that which he has acquired by the agency which he has given to steam. It is in design the greatest *invention* of human ingenuity since that of printing." "Its universal establishment would be a universal blessing."

Nevertheless, the progress of this great and beneficent invention for a long period made slow progress. Its value was not appreciated by the masses of people. It became obligatory in France in 1840, just fifty years from the time when, in accordance with the proposal of Prince de Talleyrand, then Bishop of Autun, the commission on the subject began the elaboration of the system. Its adoption was long delayed by the opposition of ignorance, prejudice and inveterate usage. More recently two agencies have greatly accelerated its progress: (1.) The successive universal exhibitions. (2.) The advancement of popular education. The former demonstrated to the world, as no other agency possibly could do, the utility of the universal adoption of such a uniform system; while the increase of the improvement of their school system has rendered the establishment of the system practicable. The result is that within a few years the system has received the legislative sanction of a large majority of the peoples of the civilized world. It has already been adopted in France, Germany, Spain, Italy, Portugal, Holland, Belgium, Mexico, Austria, Sweden, Brazil, Turkey, Roumania, Moldavia, Wallachia, and the French, Dutch, and Spanish Colonies. The system has been adopted in whole by the majority of the South American States, and in part by Switzerland, Greece and Denmark; legalized by Great Britain in 1864; and in British India the Governor-General was authorized, in 1870, to render its use obligatory. Russia has taken the preliminary steps towards its final adoption.

The employment of the weights and measures of the Metric System in our own country was legalized by Act of Congress in 1866, and perhaps few realize the extent to which the system has already been adopted in the United States. Its use is more or less extensive among scientific men, in scientific works, in the United States Coast Survey, in

the postal service, in laboratories and colleges, among chemists and physicians; it is in use by almost all who have dealings with foreign countries, and it is beginning to be adopted by important manufacturers. **

The Metric System is destined at no distant day to be established among all the civilized nations of the globe. Its adoption in our own country and its obligatory use is believed to be an event in the near future. That its adoption should have been delayed so long is not creditable to us as a nation.

Such being the case, it seems to be the duty of every public-spirited citizen to exert his influence, in this regard, on the one hand, to induce Congress to take the necessary steps to render the use of the Metric System obligatory, and on the other hand, to make preparation for this action by favoring the teaching of the system to the rising generation.

Congress will, without doubt, take the requisite action on the subject when public sentiment demands it.

What should be done in the meantime, both as a preparation for Congressional action and as a means of hastening it, may be summarized as follows:

1. That all State legislatures should render instruction in the system in all public schools obligatory.
2. That, without waiting for such legislative action, all school authorities should at once provide, as far as practicable, for instruction in the system in the schools under their charge.
3. That all school officers should, within their respective spheres of activity and influence, recommend and promote instruction in the Metric System in all schools, both public and private.
4. That all teachers should make themselves acquainted with the system, and that they should, as far practicable, give their pupils instruction in it whenever required or permitted so to do.
5. That a knowledge of the system should be made a condition of admission to high schools, colleges, and technical schools.
6. That the system should be taught in all normal schools, and schools for training teachers.
7. That at all teachers' institutes the importance and the best method of teaching the system should be presented.
8. That a knowledge of the system should be required of all teachers as a condition of their receiving a certificate of qualification for teaching.

The introduction of the Metric System as a subject of instruction in all grades of schools would not impose a heavy additional burden upon either teachers or pupils. Such is the simplicity of the system that it is easily learned, easily retained, and easily practiced. An eminent principal of a high school, in a New England State, speaking from experience, says that it will require about twenty minutes to make an intelligent class comprehend it.—*From the Report of the Superintendent of Boston Schools*.

IGNORANCE is the night of the mind, but a night without moon or stars.—*Confucius*.

THERE are now in Great Britain 141 schools exclusively devoted to instruction in art. The present year nearly 60,000 students are in attendance. The effect of such training upon the minds of the people, and in improving the character of skilled labor, must be incalculable.

THE great Prussian University at Berlin is closely competing now with the Leipsic University in point of attendance. According to the calendar which has just appeared, the number of matriculated students during the present winter amounts to 2,839, an increase of 600 on the summer semester.

THE INDUSTRIALIST.

SATURDAY, MARCH 30, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

WE have received a very neat sample of typography and printing, gotten up in all the colors of the rainbow in the Marion County Record office.

PROF. ROBERT HAY, of Chetopa, in sending us the names of pupils who had won the INDUSTRIALIST as a prize, makes the following comments on a clipping that appeared on our outside. Prof. Hay's pupils have furnished specimens of their work for the Paris Exposition, which of itself shows the push of the Professor:

I am always glad to see the INDUSTRIALIST. The issue for March 16th, just to hand, has the statement that "editors are neither perfect nor infallible," and another column gives a curious illustration of the truth of this. It is in the article, "A Billion Dissected," copied from an exchange. The writer of that article was not *perfect* in his arithmetical knowledge. He defines a billion as "a modest one followed by nine ciphers;" but the writer in the London *Times* was not dissecting *that* billion but the English billion, which is a million millions, and consequently all the statements are a thousand times too strong. The nine-cipher billion could be counted at the rate of one per second in 31 years, 263 days, 3 hours, 21 minutes, and 34 seconds. The twelve-nought billion it is that takes 31,000 years; and so of the other calculations. It is curious that though our arithmetics all use the nine-cipher billion, astronomy, the only science that deals with billions, always uses the twelve-cipher billion. I have never seen the word *trillion* in any astronomical work, though the fixed stars are at distances that require thirteen and fourteen figures to express the number of miles.

That Dam.

We made a pleasant visit to Lawrence last week, and are much indebted to the Hon. T. Dwight Thacher, of the *Journal*, for a ride about the city, which gave us a fresher and brighter notion of its strength and future. The element which impressed us most as a Kansan was that persistent old dam. Everybody has been reading of it in the papers for years, and everybody who met a Lawrencian in any quarter of the globe has been hearing of it for centuries. It was one of those myriads of Kansas things which were going to be, but which to an ordinary outsider did not possess the attractiveness of things that actually are. To the denizens of that happy burg there was no difference between the two propositions; but to the rest of us there was.

We missed the difference, and the novelty of missing it and of seeing in its place the wire cables rushing out and back with their tireless strength to drive mills, foundries, elevators, factories and presses was a delight as well as a novelty. These cables evidently mean business, and don't stop to answer questions. They look at you in a respectful sort of way, but with the kind of a nod that virtually tells you to "hire a hall" or "print it." And they mean a deal of business both for Lawrence and Kansas. There can be no question as to the superiority of water over steam power; and the exhaustless force piled up in that dam and cabled along the river banks, presents a cash attraction to the manufacturer which is bound to result advantageously to the city. And what has already been done there can be done elsewhere.

Yet we doubt the musical taste of that dam, and question whether those cables have been brought up in that refinement which one might expect, because the only song they sang while we were there, but one which they kept going over and over

like a hand-organ, was "Whoop her up Eliza Jane! Whoop her up!" And as a practical man, thinking of what Kansas needs and will have, we "jined in," and have been humming "whoop her up!" ever since, till the refrain is growing monotonous. Good for Lawrence pluck and better for the dam as it really is.

Industrial vs. Fine Art.

Greeks and Romans carried the plastic arts to the highest perfection, but they seldom extended this same grace of form to their general objects of use. These countless articles, the manufacture of which to-day gives employment to millions of busy artisans, and contributes to general wealth and comfort, did not exist in Greece, Rome or during the Renaissance. It is for the noble purpose of satisfying the wants and tastes of the multitude that we go to-day to the art productions of the past for inspiration. We do not employ sciences and art for the building of temples, gigantic monuments, and palaces, as grandly as has been done in the past; but we use them for the nobler purpose to create tasteful, healthy and comfortable homes for all. Our aim is to popularize art,—to apply it to even the simplest, commonest products. Nichols says: "To unite the useful, which is the end of industry, with the beautiful, which is the end of art, is one of the good works reserved for the latter part of the nineteenth century.

If the main field of art lies in this direction for us, then it must be the aim of teachers to educate artisans rather than artists. We must impress our pupils with the fact that artistic culture may be exhibited in other ways than in painting pictures and modeling statues or wax figures. We must show them that they may be more useful to themselves and to others by investing the art culture they have received in some industrial occupation. This I believe to be an act of serious responsibility on the part of the teacher. It will be safe for him to advise those whom he has to instruct to follow the remunerative path of industrial art. There will still be a number of young women and even young men left who will insist upon painting landscapes and figures (gingerbread), imagining themselves great artists. There will still be plenty of the gaudy and meaningless productions of that kind to give an artistic (?) air to our annual exhibitions. Should there appear, at rare intervals, a young genius, depend on it he will make himself known nevertheless.

Some pupils, too, are excited to take to palette and brush by a laudable ambition rather than real genius; and still oftener this choice is made because of an idle disposition, and because the artist's life does not require the steady habits of that of the mechanic. It is the duty of the teacher in such cases to show that life is a reality, and that the world needs busy workers rather than idle dreamers.—*J. D. Walters.*

Concerning the College Lands. No. II.

The laws of the State of Kansas, 1863, chapter 5, approved March 3d, 1863, provided for the appointment of three commissioners to select the lands donated by the general government, and fixed their pay at \$3.00 per day and expenses; and in the appropriation bill of that year was an item "of \$1,000, or so much thereof as shall be required," to pay these commissioners. The report of the State Auditor, in 1864, mentions the payment, to Johnson Clark, P. B. Maxson, and Daniel Mitchell, of \$976.03 out of the \$1,000 appropriated for the purpose. The selection was made entirely in five counties, i. e., Marshall, Washington, Clay, Riley, and Dickinson.

An appraisal of the lands was first made by James M. Harvey, since United States Senator from Kansas, and it must have been completed in 1867, as shown by the following affidavit, which supplements a detailed list and description of the lands:

"State of Kansas, } ss.
County of Riley, } ss.

"James M. Harvey, of Riley county, Kansas, being duly sworn, deposes and says that, having been employed by the Board of Regents of the Kansas State Agricultural College, he has visited and identified the lands belonging to the said College, and has made the preceding descriptive list and valuation thereof, and that, to the best of his knowledge and belief, the description is correct and the valuation fair and just; but the appraisal of the lands in the northern portion of the State, having been made without reference to railroads, all those lands situated near to or within fifteen miles of the Central Branch of the Union Pacific, or any other railroad, should have added to the price already named an amount sufficient to cover their railroad advantages.

(Signed,) JAMES M. HARVEY."

"State of Kansas, } ss.
Riley County, } ss.

"On this twenty-seventh day of July, A. D. 1867, personally appeared before me, a notary public in and for said county and State, James M. Harvey, to me personally known to be the identical person named in the above deposition, and sworn

L. S. and subscribed to the same.

THOMAS H. BAKER, Notary Public."

Thirteen two-cent internal revenue stamps attached.

Prior to the final report of the appraiser, as above, four sales were made by Hon. S. D. Houston, then, I believe, acting as agent, viz:

1. Dec. 22, 1866, to Wm. Ramsey, lot 5 and sw $\frac{1}{4}$ of sw $\frac{1}{4}$ of section 29, town 13, range 1 east; 82 2-5 acres at \$3.50 per acre, \$291.90. This was patented to Wm. Ramsey August 3, 1874.

2. Feb. 15, 1867, to O. G. Blair, lots 1 and 8 of section 29, town 13, range 1 east; 87 acres at \$3.50 per acre, \$304.50. Payment was never completed on this tract, and it is now in the market.

3. June 25, 1867, to Wm. Cummings, the sw $\frac{1}{4}$ of section 25, town 2, range 2 east; 160 acres at \$3.50 per acre, \$550. Patent was issued on this tract Nov. 9, 1875.

4. June 25, 1867, to James Crichton, the ne $\frac{1}{4}$ of section 30, town 2, range 3 east; for \$4 per acre, \$640. This tract was patented March 22, 1876.

In the first appraisal, the price rarely exceeded \$4 per acre; the average was about \$3.80. As improvements by railroads were made, the price was advanced till the average became \$6.35 per acre in 1873.

L. R. ELLIOTT.

English Perennial Rye-Grass.

One of the most favorable signs of our Kansas agriculture is the very general interest taken by our farmers in the tame grasses, so called. It is true that the importance of this subject is only beginning to be felt; but it can scarcely be denied that when settlements begin to crowd each other, and the ranges are turned into cultivated farms, both pasture and hay becoming scarce and proportionately valuable, we shall feel keenly the need of grasses that may be employed in alternate husbandry. But it is not our purpose to consider this subject from the standpoint of ten or twenty years hence. The argument for the present cultivation of the tame grasses by our farmers is a strong one, and cannot be safely disregarded.

It is often asserted that the more general cultivation of forests will materially modify our climate, and there can be little doubt of the truth of this statement; but the growth of the tame grasses will *practically* do much more in this direction. Were our prairie

pastures clover or blue-grass meadows, our feeding season would be shortened fully two months. On our present prairie-grass status, the winters, so far as cattle feeding is concerned, are scarcely shorter than those of New Hampshire or northern New York; with the tame grasses our winter feeding will correspond with that of southern Missouri and Kentucky.

At this writing our alfalfa, blue-grass and orchard-grass are good feed,—better than the prairies have furnished during four years past a month and a half later. We ask our farmers, Is the game worth the candle? Can you afford to allow this spring to go by without making a beginning in this important work?

Within a few weeks we have received a number of letters from different parts of the State, giving glowing accounts of a new sort of grass commonly called English blue-grass. If the half that is said of this grass is true, it is indeed an acquisition to the State. Among the claims put forward for it, may be mentioned the following: It endures the severest drouths without injury; the grasshopper invasions of 1874-5 did it no permanent injury; it is equally good for pasture and mowing. We give these statements on the authority of several reliable farmers who have tested the grass through a number of years and upon a large scale. Having recently received a quantity of seed and specimens of the growing plant from a Shawnee county farmer, we have no difficulty in recognizing in this "English blue-grass" our old friend, English perennial rye-grass (*Lolium perenne*). In Flint's excellent treatise on "Grasses and Forage Plants," we find the following description of this grass:

"It has had the reputation in Great Britain for many years of being one of the most important and valuable of the cultivated grasses. It is probably much better adapted to a wet and uncertain climate than to one subject almost annually to drouths which often continue many weeks, parching up every green thing. There is, perhaps, no grass the characteristics of which vary so much from the influences of soil, climate and culture as perennial rye-grass. Certain it is that this grass has been cultivated in England since 1677, and in the south of France from time immemorial. It is admitted to be inferior in nutritive value to orchard-grass (*Dactylis glomerata*) when green.

"Whenever it is cut for hay it is necessary to take it in the blossom, or very soon after, since otherwise it becomes hard and wiry and is not relished by stock of any kind; and it changes very rapidly after blossoming from a state in which it contains the greatest amount of water, sugar, etc., and the least amount of woody fibre, into the state in which it possesses the least amount of water, sugar, etc., and the greatest amount of woody fibre and other insoluble solid matter. A specimen, analyzed about the 20th of June and found to contain 81 $\frac{1}{2}$ per cent of water and 18 $\frac{1}{2}$ per cent of solid matter, was found only three weeks later to contain only 69 per cent of water and 31 of solid matter.

"It is undoubtedly a valuable grass, and worthy of attention, but it is not to be compared for the purposes of New England agriculture to timothy or to orchard-grass. It produces abundance of seed, soon arrives at maturity, is relished by stock, likes a variety of soils—all of which it exhausts, lasts six or seven years, and then dies out."

Not the least of the advantages of perennial rye-grass for this State is the large size of the seeds. These, by furnishing the growing embryo an abundance of nutriment, give the plant an early and vigorous start; and then it is soon carried beyond the point of danger from drouths and scorching suns.—*Prof. Shelton.*

[Concluded from fourth page.]
classes make a far greater use of lines than they do of figures. A farmer follows a line when laying a straight furrow; the carpenter uses the square and rule twenty times as often as he does figures; and a woman in cutting a pattern, or deciding that one bonnet is prettier than another, does so by the line or "form." So that either in its direct application, or in the exercise of that taste which comes from skill in using lines, this branch of mathematics is quite as important as a means of "mental discipline" as is the branch of computation, and is of far greater daily use. The admiral system of Prof. Walter Smith, Art Director of Massachusetts, is thoroughly followed through the grades of Free-hand, Geometrical, Object, Model, Perspective, Mechanical and Topographical Drawing, during the terms indicated by the Course of Study. In addition, constant practice in the application of lines to metal and wood is furnished in the Blacksmith, Carpenter, Turning, Scroll-sawing, Carving, Engraving and Printing shops, and to fabrics in the Sewing Department.

PRACTICAL GEOMETRY.

Not one farmer in a thousand ever uses the transit in surveying his land, the testimony of the county surveyor being decisive in court; but every farmer makes countless applications of lines and angles in laying off fields, roads, gardens, planning houses, determining levels, etc. The object of Practical Geometry is to teach the properties and uses of angles, and to make the student skillful in the application of lines to the field by the use of such simple instruments as are always within reach, or within his ability to construct; and accurate in the transferring of plans to the grounds, board or block.

PRACTICAL SURVEYING.

The drill in the use of figures and lines given by the mathematical course as above indicated renders the mastery of surveying an easy task. There is no calculation made or formula used by the working engineer which cannot be readily understood and performed by a skillful mathematician after proper instruction. The hand-book of the engineer is accordingly supplemented with such special guidance as is found necessary for a full comprehension of the mathematical principles and their applications; and extended field practice is required in the use of the compass, level, transit and theodolite.

STUDIES SPECIAL TO WOMAN.

Besides the studies already indicated, attention is called to the following:

SPECIAL HYGIENE.

As shown in the course, one term is devoted to the study of Physiology, from the text-book of Dr. J. C. Dalton. This is followed in the fourth year by a course of lectures to young ladies by Mrs. Cripps on the subject of Hygiene, embracing such applications of physiological truths and such instruction in hygienic matters as are valuable to woman.

FARM ECONOMY considers those affairs of the farm which usually come under the supervision of the farmer's wife or daughter, and which are not included in "gardening" or "household economy;" such as butter and cheese-making, dairy management, etc. A course of lectures is delivered by the Professor of Practical Agriculture. See heading, "Farm Economy."

GARDENING is included in Practical Horticulture. See heading, "Landscape Gardening."

HOUSEHOLD CHEMISTRY. See heading, "Household Chemistry."

HOUSEHOLD ECONOMY

Follows Household Chemistry and consists of lectures by Mrs. Cripps in the art of house-keeping, embracing cookery, domestic management, and kindred topics. Many elderly gentlemen sufficiently know, and more young gentlemen will duly discover, that systematic knowledge of how cooking ought to be done is luminously different from the ability to do it. Instruction without practice can effect but little. Accordingly, kitchen laboratory has been completely furnished, and affords every facility for drill in the art of cooking. This drill chiefly differs from that of a kitchen in the respect that after a girl has learned to wash dishes or pare potatoes she is not kept everlasting at either. After full trial we have found it just as feasible to give this practice, with profit and pleasure to the pupil, as it is to give laboratory practice in chemistry — and no more expensive.

GENERAL INFORMATION.

BUILDINGS.

Old College Building.—Stone, three stories, 40x60, nine rooms, used for library, cabinet, and dormitories. One mile distant from following:

College Building.—Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the Literary Departments.

Laboratory.—Cross form, 109x109, one story, stone, containing a lecture room, office, balance room and four large laboratories.

Horticultural Building.—Stone, one story and basement, 31x80, five rooms for recitations, workshop, etc.

Mechanical Building.—Stone, 38x102, two stories, seven rooms, containing Wood Shops, Printing, Telegraph, Sewing and Instrumental Music Departments.

Barn.—Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc.

Blacksmith Shop.—Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.

A Farm of 185 acres, thoroughly equipped and cultivated. Shorthorn, Devon, Jersey and Gallo-way cattle; Berkshire and Essex swine; etc., etc.

A Nursery of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyards, small fruits, etc.

The Chemical Department, with its new Laboratory and appliances, is practically equal to any in the United States.

The Mechanical Department has twenty-five kits of carpenter's tools; lathes, scroll-saws, etc.; and a well-furnished blacksmith shop.

The Sewing Department is well equipped with machines and appliances.

The Mathematical Department is supplied with the appliances necessary for study and practice in surveying.

The Printing Department has twenty-six pairs of cases; presses, etc.

The Telegraph Department has four miles of line, twenty-five instruments, and every facility for practical instruction.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

Educational Labor.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

Remunerated Labor.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as its own interests require, and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise

\$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

RULES.

1. Behave as a true man or woman should, at all times and in all places.

2. Attend to your own business promptly, thoroughly and courteously; and vigorously let alone that of other people.

3. Penalty: "Leave!"

CALENDAR.

Spring Term 1878.—Began Thursday, Jan. 3d, and will close Wednesday, May 22d.

Fall Term 1878.—Begins Wednesday, September 4th, and closes Wednesday, December 20th.

PUBLICATIONS.

The "Hand-Book," published in 1874, containing a full discussion of the educational question and the aims of the Institution, will be forwarded to any one desiring it.

THE INDUSTRIALIST, a weekly journal edited by the Faculty and published by the Printing Department, contains original and seasonable articles on the Farm, Orchard, Trades, Sciences, and Education. Price, 75 cents a year. Address A. A. Stewart, Manhattan.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

THE INDUSTRIALIST.

SATURDAY, MARCH 30, 1878.

New students keep dropping in.

Didn't freeze last night, and the fruit is all right.

Some of our best locals are crowded over till next week.

Rev. E. Gill, the new pastor of the Methodist church, has arrived.

Several members of the surveying class ran the base-lines and staked out the new building last Monday.

If there is anything prettier than the fresh green of the clover out yonder, we don't want to see it.

The Farm Department seeded fifteen acres to oats before the rain came, and has the ground ready for corn.

We made a pleasant visit to the University while at Lawrence, and were glad to see the new hall so tastefully finished and fitted.

We have had to put a column of "Press Notices" on the first page, and are compelled, for want of room, to leave out another half column.

Mr. Sessions, of Michigan, a brother of Mrs. Prof. Shelton, has been making his friends a visit, and gave us the pleasure of his acquaintance.

Owing to the meetings down town, most of the College evening meetings have been postponed, and we are without some of our usual local matter.

The Farm Department has shipped to Prof. R. B. Spitler, Hays City, the Jersey heifer Bianca, an animal of the best Jersey breeding. Prof. Spitler has a bargain.

Coming up the K. P. the other day, we noticed a new sign marking the spot where Wilder's Station is to be, which the same is called for our friend, G. C. Wilder, agent at Manhattan.

The appearance of the grounds around the Horticultural building has been greatly improved, and as soon as the grass is up they and the evergreens will speak for themselves.

The revival meetings noticed in our last have continued during the week, and much interest is manifested. In addition to the night service there have been a morning prayer-meeting and an afternoon Bible meeting.

If the rain and snow falling at this present writing, Friday noon, give away to a tight freeze tonight, any gentleman can have our interest in fruit at remarkably low figures. The wind is in the north, and — and —

The work on the new College building has begun. Mr. Winne started the excavating last Wednesday. The quarrymen have been getting out the stone for some time. Mr. Winne's intention is to push the job along.

The highest market prices are paid by the College for township or county bonds issued for building or bridge purposes, as well as for school bonds. Parties desiring to sell such bonds would do well to apply to E. Gale, Loan Commissioner, Manhattan, before disposing of bonds elsewhere. See advertisement.

As the greater part of the matter in the INDUSTRIALIST is put in type by the printing classes, and as these classes have their regular hours in

the forenoon and none after Friday, it will materially lessen the expense of this Department if articles are in hand not later than Tuesday morning, which request is made accordingly.

Prof. Shelton desires to say that since the article on "English Perennial Rye-Grass" was in type he has received a letter from Regent B. L. Kingsbury, of Burlington, to the effect that while in his experience that grass does well the first year, it fails the second. The question is whether Judge Kingsbury had the Italian or the English rye-grass. How is it, Judge?

The number of immigrants pouring into this State is beyond realization. All the trains are packed, and specials are almost getting to be regulars. On the K. P. the other day, there were about seven million children to the car; and if Mrs. John Rogers, of old primer memory, had been around she would have thought her family wasn't worth counting. The heaviest of the tide hasn't set in yet, and we will have to organize several new counties for the especial benefit of the Pennsylvanians and Ohioans who will be along next month. Put Kansas down for a million in 1880, and a car load of Congressmen.

The Alpha Beta Society was called to order March 22d, by President G. L. Platt. The question debated was: "Resolved, That happiness depends as much upon observing physical as moral laws." Decision in favor of the negative. The Gleaner was read by A. T. Blain and Miss Jennie Coe. Extemporaneous speaking was generally participated in by the members. Duties assigned were: Declamation, C. O. Smith; essay, Mr. Sternberg; select reading, Mr. Wyland. The following is the question to be debated next week: "Resolved, That the annexation of Canada and Mexico would be beneficial to the United States." Affirmative, W. H. Sikes and A. T. Blain; negative, Miss Parker and A. H. Stiles. Under the head of new business the Society went into committee of the whole to consider the matter of holding a joint session with the Webster Society. A series of resolutions was adopted which may appear hereafter.

CUMAS.

Mr. Albert Griffin, editor of the Manhattan *Nationalist*, one of the most sensible, effective and earnest speakers in the temperance cause, announces his willingness to lecture upon that subject at such places as may desire his services, spending from one to five days in each place. The *Nationalist* says:

It is impossible to say now how long he can remain in the field, or how many places he will be able to visit, and therefore those who desire his services will do well to address him at once. Communications should state the name of the temperance societies operating in the community, and whether or not Murphy meetings have been held, who by, and with what success; the strength of the temperance element; the population of the town and surrounding country; capacity of hall or church to be used; route to be traveled, and time of arrival and departure of cars or stages. Not being able to work gratuitously, he will expect his expenses to be paid, and for his time will accept such compensation as those interested feel disposed to tender.

ENTERPRISE ITEMS.

Gen. Kilpatrick delivered a fine lecture at the Presbyterian church, Monday evening, on "Sherman's March to the Sea," a topic familiar to many of our old soldiers, and Gen. Kilpatrick brought the old times vividly before their minds.

On Jan. 24th the Mikado opened the Agricultural College at Komapa, near Tokio. It is a very complete institution, standing on a farm of 150 acres. There is a chemical laboratory, and a veterinary hospital is to be added. The professors of agriculture, chemistry and veterinary anatomy are from the Royal Agricultural College of England.

NATIONALIST ITEMS.

Nearly all the land in the Solomon Valley has been homesteaded.

Many deciduous and evergreen trees are being planted upon the College campus.

Bouquets are circulating freely among the students — generally between the ladies and gentlemen.

Some of our best students go home this week to teach or work on the farm. Most of them leave a promise to return next year and bring others with them.

THE INDUSTRIALIST.

SATURDAY, MARCH 30, 1878.

A REPRINT

OF THE

BIENNIAL CATALOGUE

OF THE

AGRICULTURAL COLLEGE.

CALENDAR YEARS 1875-77.

Board of Regents.

J. LAWRENCE, Chairman, Beloit, Mitchell Co.
N. A. ADAMS, Sec'y, Manhattan, Riley Co.
B. L. KINGSBURY, Burlington, Coffey Co.
J. R. HALLOWELL, Columbus, Cherokee Co.
S. M. WOOD, Elmdale, Chase Co.
T. C. HENRY, Abilene, Dickinson Co.
JNO. A. ANDERSON, Manhattan, Riley Co.

E. B. PURCELL, Treas. L. R. ELLIOTT, Land Agent.
E. GALE, Loan Commissioner.
Manhattan, Kansas.

FACULTY.

J. A. ANDERSON, President, Prof. Political Economy.
M. L. WARD, Prof. Mathematics and English.
WM. K. REDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Prac. Agricul., Sup't Farm.
E. GALE, Prof. Botany and Horticulture.
J. E. PLATT, Prof. Elem'y English, Mathematics.
JNO. D. WALTERS, Teacher Industrial Drawing.
HON. D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MISS CARRIE STEELE, Teacher Instrumental Music.

POLICY.

On the first day of April, 1873, and in accordance with an Act approved March 6, 1873, a new Board of Regents assumed control of the Kansas State Agricultural College. During that summer radical changes were made in the management and methods of the Institution, and on September 3, 1873, the Board officially announced its purposes in the following words:

"For the purpose of defining the policy of the Board of Regents of the Kansas State Agricultural College, and as a guide to the Faculty in preparing a new curriculum:

"Resolved, That the object of this Institution is to impart a liberal and practical education to those who desire to qualify themselves for the actual practice of agriculture, the mechanic trades, and industrial arts.

"Prominence shall be given to agriculture and these arts in the proportion that they are severally followed in the State of Kansas.

"Prominence shall be given to the several branches of learning which relate to agriculture and the mechanic arts, according to the directness and value of their relation."

During the past four years this line has been strictly followed, not merely in profession, but in spirit and fact. The course of instruction, which as certainly determines the direction of the student's progress as do the iron rails the direction of a train's movement, has been rebuilt and fully conformed to this policy. The several departments of instruction have been entirely reconstructed; and are manned by able and enthusiastic specialists, harmoniously working with brain and hand for the speediest attainment of the designated object. To the outer limit of the facilities at their disposal, both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which is of most value to those who expect to earn a livelihood by farming or the other industrial vocations.

A party of gentlemen may agree to visit foreign countries, and, by using proper means, execute their purpose. On returning, they may state, without vanity or egotism, that they had procured valuable articles which were the only ones of the sort in this country. It is in exactly this and no other spirit that, in speaking of the progress made in developing the policy adopted by the Board in 1873, we claim that Kansas has an Agricultural College which differs radically and advantageously from all other institutions in the United States; that it furnishes a mental education having less superfluous bosh and possessing more real value to the boys and girls who will have to make a living by working, than can be obtained elsewhere; that it affords a mental discipline equal to that of any other institution; and that it gives a manual training which cannot be found elsewhere.

INDUSTRIAL EDUCATION.

The real value of an education to the student depends upon two things: First, the practical worth of the knowledge taught; and, second, the degree in which he makes it his own. Hence, the ability of any institution to give a practical education depends upon the kind and aim of the knowledge it teaches, and upon the thoroughness of the instruction therein. The State Agricultural College was directly endowed by Congress, and is guided by the State, for the specific purpose of furnishing to the industrial classes of Kansas a "practical" education, that is, "one fit for use." As its name indicates, and as the statistics of the industries of the State require, its chief work must be that of giving a useful and valuable education to those who will engage in farming; and, therefore, the Farmer's Course must, from the nature of the case, be its main one.

FARMER'S EDUCATION.

Words and figures are merely instruments with which to record ideas. They are not themselves ideas, nor should they be made the chief end of an education. As a wagon is necessary to haul grain, so are they a necessary part of an education; but as the wagon is not the grain, so they are not the knowledge which the farmer converts into money. Hence, the classics and higher mathematics are not taught. But it will be noticed in the following course that so soon as the pupil acquires working skill in the use of the English language as a tool, and of figures and lines as math-

ematical tools, those arts and sciences which present knowledge that has a cash value to the farmer are taught as rapidly as their importance and thorough acquisition will permit. Studies numbered (1) and (4) in the second, third and fourth years are the spine of the course, to which the others are as ribs and muscle. Explanatory details will be found in subsequent columns:

FARMER'S COURSE.			
FOURTH YE'R	THIRD YE'R	SEC'ND YE'R	FIRST YEAR.
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
6. 5. 4. 3. 2. 1.	6. 5. 4. 3. 2. 1.	6. 5. 4. 3. 2. 1.	1. Drill in English, Industrial Drawing.
5. Adv'd. Arithmetic, Book-keeping.	U. S. History, Industrial Drawing.	U. S. History, Industrial Drawing.	2. Drill in Arithmetic.
Zoology.	1. Physiology.	1. Physiology.	3. English Structure.
Agricul. Chemistry, Meteorology.	2. Rhetoric.	2. Rhetoric.	4. Industrial Drawing.
Physics.	3. Algebra.	3. Algebra.	5. English Structure.
Practical Agricul. (elementary).	4. Practical Agricul. Chemistry.	4. Practical Agricul. Chemistry.	6. U. S. History, Industrial Drawing.
Industrial Drawing.	5. Botany, Entomology.	5. Botany, Entomology.	7. 1. Drill in English.
Inorganic Chemistry.	6. Inorganic Chemistry.	6. Inorganic Chemistry.	2. Drill in Industrial Drawing.
Practical Surveying (advanced).	7. Practical Geometry.	7. Practical Geometry.	3. Industrial Drawing.
Horticultural, Landscape Gardening.	8. Horticultural, Landscape Gardening.	8. Horticultural, Landscape Gardening.	4. Industrial Drawing.
Organic, Analytical Chemistry.	9. Organic, Household Chemistry.	9. Organic, Household Chemistry.	5. English Literature.
Practical Surveying.	10. Household Economy.	10. Household Economy.	6. English Literature.

WOMAN'S EDUCATION.

Nearly one-half of our students are females, and the Woman's Course is prepared expressly for their liberal and practical education. We have no doubt whatever that practical men and women, who understand what it means and what it seeks to do, will fully endorse it. For details see synopsis given by the several departments:

WOMAN'S COURSE.			
FOURTH YE'R	THIRD YE'R	SEC'ND YE'R	FIRST YEAR.
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
6. 5. 4. 3. 2. 1.	6. 5. 4. 3. 2. 1.	6. 5. 4. 3. 2. 1.	1. Drill in English.
5. Adv'd. Arithmetic, Book-keeping.	U. S. History, Industrial Drawing.	U. S. History, Industrial Drawing.	2. Drill in Arithmetic.
Zoology.	1. Physiology.	1. Physiology.	3. English Structure.
Physics.	2. Rhetoric.	2. Rhetoric.	4. Industrial Drawing.
Industrial Drawing.	3. Algebra.	3. Algebra.	5. English Structure.
Inorganic Chemistry.	4. English Literature.	4. English Literature.	6. U. S. History, Industrial Drawing.
Practical Surveying.	5. Botany, Entomology.	5. Botany, Entomology.	7. 1. Drill in English.
Horticultural, Landscape Gardening.	6. Inorganic Chemistry.	6. Inorganic Chemistry.	2. Drill in Industrial Drawing.
Organic, Household Chemistry.	7. Household Economy.	7. Household Economy.	3. Industrial Drawing.
Practical Surveying.	8. Household Economy.	8. Household Economy.	4. Industrial Drawing.

MECHANIC'S EDUCATION.

The number of students received during our day who have really purposed to become mechanics, and, therefore, who were justly entitled to a special course preparatory thereto, has been relatively very small. In view of this fact, and of the present resources of the Institution, together with the adaptedness of the leading course to the wants of the intelligent mechanic, it has been found practically unnecessary to diverge from the Farmer's Course. Additional studies, specially adapted to the mechanic's use, will be furnished in a Post-Graduate's Course. But the above course, as it stands, and in the order of its standing, will be followed by all male students.

If it be urged that the distinctively agricultural knowledge taught in the Farmer's Course is not directly valuable to the mechanic, we reply that, admitting the point for the purpose of argument, yet: 1. This knowledge is of more practical value to the mechanic than is the Latin, Greek, or a half dozen other things embraced in the usual course preparatory to the professions; 2. That the great majority of Kansas mechanics will also be more or less engaged in agriculture; 3. That those studies in the course which are directly valuable to the mechanic, together with the shop facilities, offer a better mechanic's education than can be elsewhere found west of the Alleghanies.

INDUSTRIAL DEPARTMENTS.

Having knowledge in the head is one thing; ability to use it with the tongue, fingers or feet is quite another thing. Both are vital to success in practical life. A man might thoroughly understand the theoretical principles of carpentry, and yet, not having used the tools, be wholly unable to earn carpenter's wages. So in all other vocations. Accordingly, instruction is given in the following well-equipped Industrial Departments, and every student is required to recite in some one of them, as selected by the pupil or parent:

FOR MALE STUDENTS.

The Farm.
The Nursery.
Carpentry.
Cabinet-making.
Turning.
Wagon-making.
Painting.
Blacksmithing.

Dress-making.
Printing.
Telegraphy.
Scroll-sawing.
Carving.
Engraving.
Photography.
Instrumental Music.

Each of these departments is conducted exactly as in daily life, and aims to give precisely the drill received by an apprentice. No charge is made, either for tuition or material, from male students taking the Industrials provided for them; nor from female students taking the ones provided for them, except in the Department of Instrumental Music, where the usual fee is assessed for the use of pianos or organs. Male students taking either Printing or Telegraphy are charged \$1 per month for the use of material and instruments.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PRACTICAL AGRICULTURE.

Second Year:—General principles of breeding history and characteristics of breeds; adaptation of different breeds for special purposes and localities; implements of simple tillage; mechanical principles involved in their construction; action of the plow upon soil and subsoil; principles of draught; influence of different adjustments upon draught; use of the dynamometer; value of hood crops in a system of husbandry; the cultivation of corn and roots; soils that need drainage; how to lay out a system of drains; house drainage; sewerage.

Fourth Year: General view of agriculture, ancient and modern; agricultural progress of the last century; relative advantages of mixed husbandry and special farming; the selection and arrangement of the farm with reference to the system to be pursued; rotation of crops; general advantages of a rotation; the best rotation with reference to disposition of labor, production of manure, and extermination of weeds; pasture and production of grain and forage crops; manures, how best housed and applied; composting manures; commercial fertilizers; systems of feeding; stall feeding; steaming food; soiling; experiments in feeding; farm buildings; farm-houses; barns.

FARM ECONOMY.

Woman's Course, Fourth Year: Dairy products as human food; influences affecting character of milk; manufacture of condensed milk; the factory system and household plan of cheese-making; treatment of rennet; general process of cheese manufacture; subsequent treatment of cheese; butter-making; creameries; "deep" and "shallow" setting systems; general process of butter-making; packing and preserving butter.

DEPARTMENT OF BOTANY AND PRACTICAL HORTICULTURE.

This department embraces a course of instruction in the elements of botany, structural and systematic, with a constant attention to the practical application of botany to the farm, orchard, garden, nursery and forest; also a course of lectures on Landscape Gardening. The instruction is mainly given by lectures, accompanied by regular practical drill in all the work of the fruit, vegetable and flower gardens, nursery, orchard, vineyard and ornamental grounds.

The lectures in Practical Horticulture embrace the following and kindred subjects: The relation of atmospheric motion, moisture and temperature to horticulture; seeds, the means of collecting and preserving; propagation, by seeds, cuttings, layers, suckers, grafting, budding; care of young plants; improvement of varieties; management of commercial and farm nursery; modes of pruning; the orchard; fruit suitable for orchard and garden culture; the flower, vegetable and fruit garden; importance and mode of forest culture; shelter belts and their influence; weeds and useful plants; noting the species of trees worthy of culture, either for profit or ornament.

LANDSCAPE GARDENING.

The lectures on Landscape Gardening not only unfold the accepted principles of the art, but at the same time give special attention to such applications of the art as may be made universally available in laying out and improvement of farms and the homes of the people. These lectures are accompanied by a practical drill in the work of laying out and plotting grounds topographically.

CHEMICAL DEPARTMENT.

PHYSICS.

This includes a full consideration of the laws of mechanics, of liquids, gases and vapors, weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life. Text-book, Ganot.

INORGANIC CHEMISTRY.

This course is opened with a careful study of chemical forces and the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially with regard to their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.

This comprises a thorough study of the chemistry of organic compounds, the composition of plants and of the various compounds derived from them. Constantly accompanied by laboratory practice.

CHEMICAL ANALYSIS.

In this course each student is furnished his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, mineral waters, commercial compounds, etc. After completing this course, he enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.

This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crop Feed."

METEOROLOGY.

Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken under direction of the Signal Service. Text-book, Loomis' Meteorology.

MINERALOGY.

This includes the study of the laws of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blowpipe analysis forms a very important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy.

HOUSEHOLD CHEMISTRY.

A course of lectures on this subject is yearly delivered to a class of young ladies. The course embraces the chemistry of cooking; the composition of food; bread; tea, chocolate and coffee; butter and milk; ripening and preservation of fruits, etc.

SPECIAL COURSES

Are constantly in progress in Assaying, Pharmaceutical Chemistry and Photography.

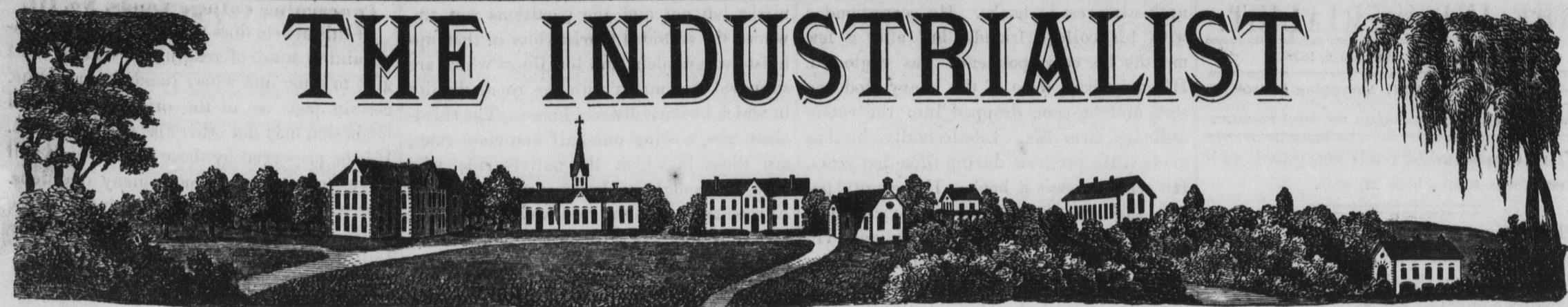
ENGLISH LANGUAGE.

Words are simply tools used to express ideas; and, since the vast majority of our communications are made by the employment of spoken or written words, skill in using them is as profitable

to the industrialist as is dexterity with the needle profitable to the seamstress. The direct aim of the course is to make the student skillful and intelligent in handling the machinery called language, just as an engineer handles a locomotive; and no drill will be omitted, or effort spared, to gain this end. Apart from the course itself, which is far more practical and complete than that usually found in literary colleges, the constant attention given to this subject by all the departments, and especially the practice required in the printing classes, affords superior advantages to the student.

DRILL IN ENGLISH.

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, APRIL 6, 1878.

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FARMER'S COURSE.

FOURTH YE'R	THIRD YE'R	SEC'ND YE'R	FIRST YEAR
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Drill in English.			
2. Drill in Arithmetic.	2. Drill in English.	2. Drill in English.	2. Drill in English.
3. Industrial Drawing.	3. Industrial Drawing.	3. Industrial Drawing.	3. Industrial Drawing.
4. English Structure.	4. English Structure.	4. English Structure.	4. English Structure.
5. Adv'd Arithmetic.	5. Adv'd Arithmetic.	5. Adv'd Arithmetic.	5. Adv'd Arithmetic.
6. U.S. History, Industrial Drawing.			

WOMAN'S EDUCATION.

Nearly one-half of our students are females, and the Woman's Course is prepared expressly for their liberal and practical education. We have no doubt whatever that practical men and women, who understand what it means and what it seeks to do, will fully endorse it.

WOMAN'S COURSE.

FOURTH YE'R	THIRD YE'R	SEC'ND YE'R	FIRST YEAR
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Physiology.	1. Physiology.	1. Physiology.	1. Physiology.
2. Rhetoric.	2. Rhetoric.	2. Rhetoric.	2. Rhetoric.
3. Algebra.	3. Algebra.	3. Algebra.	3. Algebra.
4. Practical Agriculture (elementary).			
5. Physics.	5. Physics.	5. Physics.	5. Physics.
6. Industrial Drawing.	6. Industrial Drawing.	6. Industrial Drawing.	6. Industrial Drawing.

MECHANIC'S EDUCATION.

Because of the adaptedness of the leading course to the wants of the intelligent mechanic, it has been found practically unnecessary to diverge from the Farmer's Course. Additional studies, specially adapted to the mechanic's use, will be furnished in a Post-Graduate's Course.

Death on the Wall.

There is a popular custom which periodically threatens the good health of the members of many households, to which it seems very proper, just at this season, to call the attention of all thinking readers of the *Farmer*. I refer to the favorite practice of many house-keepers of applying each spring a fresh coating of wall paper to the walls of the general living-room of the family. While such an operation undoubtedly serves to hide from view the soiled and offensive landmarks of the preceding year's wear, and gives the room a fresh, airy and cheerful appearance, it, upon the other hand, quite as undoubtedly serves to sow the germs of sickness and disease, and if long persisted in is liable to result in serious consequences to all concerned. If we could once convince ourselves that this custom is one far better honored in the breach than in the observance, the family doctor would be less in demand for the treatment of the various "spring difficulties" whose regular occurrence we are apt to regard as a matter of course.

I am led to mention this matter just now from a pertinent incident which during the past week has occurred under my notice. Not a thousand miles from where I now write, stands a dwelling whose present occupant has just discovered upon the walls of the dining-room a coating of *nine sheets* of *cheap wall paper* nicely plastered one above the other in as many successive seasons. What wonder that one of the occupants of such a house was alarmed by persistent symptoms of typhoid fever—a most unusual malady in the pure atmosphere of Kansas; or that the whole family found themselves compelled to seek protection from an assorted variety of malarial miseries, by a liberal application of quinine and tonics.

The above is, to be sure, an extreme case, but it certainly makes emphatic the general principle that the lavish use of cheap paper upon the walls of the house must, from a sanitary standpoint, be unqualifiedly condemned. To satisfy ourselves of the truth of this statement we need only to examine, first, the nature of the wall paper itself. Its pattern is cheaply and loosely printed, and, if bright colored, is frequently found to contain rank poison—sometimes arsenious oxide or copper arsenite. These poisonous materials joining from the wall and falling as an impalpable powder upon the atmosphere of the room, have, in many instances, been the occasion of most alarming symptoms. Second, in the manner in which the paper coating is applied. To remove from the wall the paper of the preceding year is often a difficult if not quite impossible task. In the majority of cases it is not even attempted, but the fresh paper is plastered upon the preceding layers without further ado. Thus there gradually accumulates, year after year, a slowly-decomposing mass of flour, paste and paper, swarming with bacteria, and which can act in no other way than as a hot-bed of the germs of disease. Sir Wm. Thompson says in a recent lecture that in all the materials upon which he has experimented, nothing has proved so favorable for the growth of bacteria as flour paste. When we think of the number of square feet of air-polluting surface exposed by the walls of an ordinary room so covered, we can not wonder at the serious consequences which in many instances are traceable directly to this source. Third, and no less important than the two preceding difficulties, the application of a coat of cheap paper and flour paste to the wall tends to make the dwelling-room, in a greater or less degree, an air-tight compartment, which is exactly what is *not* wanted.

I notice that an item in the Boston *Journal of Chemistry* for March condemns certain

building materials, such as brick and sandstone, because they do not make an air-tight wall. However this may be in the atmosphere of large cities, I have no hesitation in affirming that for the ordinary American home, the very fact that a material is not absolutely impermeable to air, should from a sanitary standpoint, commend it for use in constructing the house-wall. Here in the West, nature has placed within our easy reach a material not only exquisitely beautiful but practically perfect for the construction of a healthy home, in the limestone of our uplands and prairie bluffs. Through the hard-finished wall of this material, the pure out-door air filters in and out with a ceaseless, breathing motion, which though invisible to our sense, is worth all the "rapid transit" systems of ventilation which could be packed into the four walls of a house. But when with the home once built and ready for occupation, we put an end to this beautiful process of house-breathing by applying a practically air-tight coating of wall paper and flour paste, the results which follow are very much such as we should experience in coating the surface of our own bodies with an impervious covering, thus preventing all surface respiration. And, finally, to all these objections may be added the fact that the continual use of wall paper in the house is in the end far more expensive, and, when contrasted with the soft-tinted, hard-finished wall, is itself far less pleasing or attractive to a refined taste. These dangers, resulting from a too liberal indulgence in cheap wall coverings, are but a few of the perils which surround us in our every-day lives; but it is only by promptly attending to these ordinary sources of danger that our safety and prosperity in health may be assured.—*Prof. Kedzie, in the Kansas Farmer.*

Potato Culture.

A French agricultural journal, called the *Basse Cour*, describes the result of some experiments in potato growing, recently conducted in Germany. The principal conclusions to which the experimenters have come seem to be two in number. The first of them is that the vigor of the potato plant is always in direct proportion to the weight of the tubercle used for sets—a theory which certainly finds some support in common sense alone, considering that the young shoots for some time draw their sole nourishment from the mother potato. The second conclusion is that there is a great variety in the productive power, not only of different tubercles, but also of different "eyes" in the same potato. It is found that the eyes at the top of the potato produce a much more vigorous offspring than those in the lower part, and the consequence is that those agriculturists who cut their potatoes in half before planting them are not well advised in cutting them vertically, but should always divide them horizontally, planting the upper half and using the other as food for cattle. But the best plan of all is to plant the tubercle whole, cutting out, nevertheless, all the eyes except those in the top part.

Such being the principles laid down, we come now to the experiments upon which they are based. These were conducted in a garden soil by Professor Gantz, the amount of crop produced by several different settings of potatoes being accurately estimated in statistical tables. It appeared that from tubercles divided vertically, only 5 tons were produced per acre, and from whole potatoes 7½ tons. The third sort were potatoes horizontally divided, which are set down as having produced 9½ tons. In this particular, however, some of the other experimenters do not agree with Herr Gantz, but maintain that, other things being equal, the whole po-

tatoes will always produce more than halves, however cut. On the fourth result, however, all agree; and that is that the whole potatoes from which the lower eyes have been cut out produce 11½ tons per acre, or more than double the result shown by the sets first mentioned.—*Irish Farmers' Gazette.*

A Little Plain Talk About Our Boys.

Three-fourths of all the American boys with whom we are acquainted would do almost anything rather than work at a trade or some laborious calling for a living. They will clerk at starvation prices, become agents for anything under the sun, wait on tables at hotels, in restaurants, or even hire as bar-tenders, mixing whisky and strychnine drinks for bummers, gamblers and guzzlers of all grades and descriptions. Boys from the country, from the towns and the cities, from everywhere, are hunting for places to make a living without work. They are lounging about the hotels, the saloons, the street corners, trying to convince themselves that this is a cold, cruel world, when, in fact, they have the "blues," brought on by protracted laziness.

We have a most substantial contempt for a lazy man, young or old, and it will somewhat relieve the intensity of our feelings to say plainly that American homes are turning out at this time a large number of shallow-pated, lazy, professional humbugs, who should have been taught a trade. The fact is, that a smattering of the common branches taught in our schools, and the ability to write a legible hand, is taken for genius; and the fond parents encourage the boy to do something more honorable than to learn a trade, and the boy that would have earned a reputation in his community as a mechanic, ekes out a living at the fag end of some profession. Foreign-born boys, and the sons of foreign-born parents, are taking the places to-day in our shops as master mechanics that could be held by American youths, but for their snobbish pride, which their parents have fostered and encouraged. It is high time parents on the farm and in the towns looked this subject squarely in the face, and undertook to so direct the education of their sons, and their daughters, too, for that matter, that a trade would not appear to the young man as an indication of inferiority.—*Winfield Courier.*

MANY an unwise parent labors hard and lives sparingly all his life for the purpose of giving his children a start in the world, as it is called. Setting a young man afloat with money left him by his relations, is like tying bladders under the arms of one who cannot swim; ten chances to one he will lose his bladders and go to the bottom. Teach him to swim, and he will never need the bladders. Give your child a sound education, and you have done enough for him. See to it that his morals are pure, his mind cultivated, and his whole nature made subservient to laws which govern man, and you have given him what will be of more value than the wealth of the Indies.—*Exchange.*

A GERMAN inventor has patented an apparatus designed to lessen the strain upon the horse, particularly at starting of a loaded vehicle. The traces are fastened to an iron rod running through the center of a cylinder containing several rings of gutta-percha. When the horse exerts himself the strain first comes upon and compresses these rings, saving his shoulders. The German War Department, having made experiments and found that the saving of force, not alone at starting but during traction, was at least a third, has resolved to employ the attachment in its artillery and military trains.—*Exchange.*

THE INDUSTRIALIST.

SATURDAY, APRIL 6, 1878.

JNO. A. ANDERSON, Managing Editor.
ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

THE Commonwealth reads very much as if Prentis was somewhere around.

THE clipping on the outside, "A Little Plain Talk About Our Boys," should have been credited to the *Kansas Farmer*, as it was when published before.

ANY gentleman who thinks this isn't the sixth of May instead of the sixth of April, calendars to the contrary notwithstanding, needs only recall his universal observation of fruit buds and grain.

GOVERNOR ANTHONY has appointed as Regents of the Kansas State Agricultural College, for the term ending March 31, 1881, W. L. Challiss, of Atchison, Atchison county, and L. J. Best, of Beloit, Mitchell county. Both appointments are good.

The True Reason.

During the past few years a great deal has been heard about the subordinate position of farmers as a class. They are not proportionately represented in Congress and in the State Legislatures. They do not have their share of State and county offices. Their financial interests are not attended to. They are at the mercy of monopolists and middlemen. Without admitting the truth of all of these assertions, which have been the sole capital of many a political demagogue for years, let us inquire why such assertions have any foundation in fact. Is it not because farmers as a class have too much neglected the culture of the intellect? Is it not because as a class they have not persistently through life pursued a course of intellectual development attained only by systematic study? Is it not because there has been a needless separation between manual skill and intellectual acumen? Because a daily business requires mainly muscular force must the intellectual powers remain dormant? Because a farmer's life is one of manual toil can he make no intellectual progress? If this be the case, no wonder that the young man whose mind has been quickened by study, and who has experienced the keen delights of intellectual achievements, resolves not to return to the farm. This is the reason why so many farmers' sons desert the farm and homestead. We wish to enter our protest against this accepted opinion. We know by personal experience and observation that an industrious farmer can find considerable time for study and thought. In this respect he has the advantage over the tradesman and mechanic.

But to resume the subject of discussion. Why do not farmers have their share of civil offices? Men are not elected to office because they are lawyers, doctors, merchants, or broken-down preachers, but because they have that intellectual development which commands respect, and which fits them in the estimation of their fellow-citizens for positions of honor and trust. In the so-called professions men are obliged to study. The process of intellectual development goes on from year to year. This accounts for the difference we find in the intellectual character of men in middle life.

Ten years ago two young men chose their occupations for life. In natural endowments each was the peer of the other. They had been classmates from boyhood. One became a farmer. For awhile he kept

up his interest in books. He corresponded with his college friends, but after a few months his correspondence was neglected. His neighbors were of the heavy-plodding sort, and he soon dropped into the rut of ordinary farm life. Intellectually, he has made little progress during these ten years. He seldom reads a book. His county paper, the weekly *Tribune*, an agricultural paper, make up his stock of reading. He seldom comes in contact with a mind more vigorous and active than his own, and hence the course of his intellectual life is both shallow and sluggish. A few months ago he joined the Grange. He has been required to write a few essays on practical subjects. The dormant energies of his mind have been awakened. He finds that this intellectual work does not interfere with the management of his farm. He begins to realize that he made a mistake at the outset. He should have kept up his habits of study and thought. He should have cultivated his mind as well as his fields. The Grange may do something for him, but he has lost ten years of intellectual life.

The other young man went into a law office to copy, keep books; in fact, to serve as a lawyer's clerk. He was ambitious, and he worked hard. He was poor. Sometimes he longed for the easy life and the abundance of good things with which he saw his farmer friend surrounded. He is now a rising lawyer. His success has inspired him with confidence, and his ambition has kept pace with his success. He expects to become wealthy, and has high hopes of political preferment.

Are not these two men representatives of those who stand in the highest rank of two classes, into which we may divide those who have reached middle life. It is persistent, systematic culture of the intellect that places one class in a high position. It is because the intellect is neglected that another class is found in the background.—*Prof. Ward.*

Paris and Back.

To thousands of Americans the Centennial was a magnificent revelation. Its long aisles, festooned and crowded with products from every continent and industry, were as so many gates through which men caught glimpses of a beauty before unrealized; and ever since, they have longed to enjoy something more than mere glimpses. Reading Prentis' "A Kansan Abroad" doesn't cool the passion to look upon the landscapes, people and paintings of the old world; and when one remembers that to these attractions is to be added those of probably the greatest of the World's Fairs, it is very hard to control the desire to go to "Y'ur-rup." The most powerful restraint with the majority of Kansans is—a want of cash. If we all had plenty of money, there would be an immense deal of Kansas tramping through the Boulevards, gliding up the Rhine, and comparing the Alps with the Rocky Mountains, during the coming months; and it is by no means certain that many Kansans won't indulge in that luxury anyhow, because the cost is less than is generally supposed.

There are fifteen regular lines of steamers running across the Atlantic, and three different kinds of accommodations on each, viz., first cabin, second cabin, and steerage, for which different charges are made. On the European railways there are also three charges, for first, second and third-class. The first-class is about equivalent to a special car on our roads, and is there taken by noblemen and other donkeys who don't know how to get clear of their money. The second-class is akin to our sleeping cars, with the

births left out and the partitions run up, where the secluded tourist rides in that upholstered grandeur and loneliness which are supposed to comport with the royal dignity in which he daily lives at home. The third-class cars, costing one-half first-class rates, are those in which the natives ride, who may be thought to know something about Europe and about the best way of "doing" it. Why an American sovereign, who in his own country takes a car that any body can enter, must show his frills and graces on the Continent by not taking a similar car, is one of those stupidities that has not brains enough to be absurd—it is simply a stupidity. But, as in other things, those who dance must pay the fiddlers; and any man has a right to spend his money as he pleases.

One of the most sensible enterprises extant is the through-ticket business originated and maintained for thirty-five years by Cook, Son & Jenkins, who, because of the magnitude of their operations, obtain less rates from lines than travelers can, the discount being from twenty to forty per cent. They will put a man around the world for \$950 gold, and, in addition, board him at specified hotels at from \$2 to \$3.25 per day. We give the prices of a round-trip ticket from New York to London, Paris via Dieppe, back to London and New York. First-class means best rooms on steamers, boats and railways; second-class means best rooms on steamers and boats, and second-class on railways; third-class means best cabin on steamers and boats, and third-class on railways. All quotations in gold when not designated as currency:

Cunard Line—1st, \$210; 2d, \$200; 3d, \$164. Inman Line—1st, \$188; 2d, \$180; 3d, \$155. State Line—(currency), 1st, \$155; 2d, \$138.50; 3d, \$105. Anchor Line—(currency), 1st, \$176; 2d, \$172; 3d, \$132. National Line—(currency), 1st, \$116; 2d, \$112; 3d, \$108.50. Coupons to hotels in England, Ireland or Scotland, \$3 per day; Continent, \$2; Paris, \$2.50 to \$4 at the Grand. Here is a sample of round-trip tickets from Paris: Paris, Bale, Schaffhausen, Zurich, Zug, Lucerne, Alpnacht, Brunig, Brienz, Interlaken, Thun, Berne, Lausane, Vevay, Martigny, Chamouny, Geneva, Dijon, Paris, first-class, \$43; 2d, \$34.50. In addition, those who wish can reduce the steamer fare to \$40 or \$50, round trip, by taking the steerage; though it is a grave question whether this whistle doesn't cost more than it is worth. But the above figures show that we can travel comfortably and see the Exposition thoroughly at a cost of from \$200 to \$500.

Furthermore, the above firm, for \$300 gold, and furnishing first-class accommodations and hotels during forty-seven days, will take you to London, English Lakes, Scotch Lakes, Paris, Brussels, Antwerp and back to New York. The same tour, lasting sixty-one days, with Switzerland and the Rhine added, for \$400; or one lasting ninety-five days, and including Rome, Florence, etc., for \$600. If you buy no extras on the trip, your expenses will be the sums named; and these parties are in charge of a conductor.

Most persons prefer to travel on their own hook; but those who cannot do so at less rates than Cook offers, can, before leaving New York, buy their tickets or hotels to any point or for any length of time, and thus settle the limit of necessary expenses. For details address Cook, Son & Jenkins, 261 Broadway New York. But our point has been to show that a trip may be made to the Continent for less money than many imagine, or than is often spent in a summer's trip in America.

Concerning College Lands. No. III.

If this article does not afford the most entertaining kind of reading, it will at least give to some into whose hands it may come, certain facts as to the originally selected lands that may not otherwise meet their eye. If it be preserved by those interested, it will serve to answer a good many questions. Herewith we give the full description of the lands selected in the first list, dated July 18th, 1863, covering 70,305.21 acres:

Section.	Township.	Range east.	No. acres.	Section.	Township.	Range east.	No. acres.
S $\frac{1}{2}$	29	13	1 320	All	7	15	4 627.60
Se $\frac{1}{4}$	31	1	1 160	Se $\frac{1}{4}$	18	15	4 160
Nw, sw & ne $\frac{1}{4}$ s	32	13	1 480	Ne $\frac{1}{4}$ &	19	15	4 320
W $\frac{1}{2}$	1	13	2 321.41	sw $\frac{1}{4}$	15	15	4 320
E $\frac{1}{2}$	2	13	2 321.17	Nw $\frac{1}{4}$	22	15	4 160
N " "	11	13	2 320	All	29	15	4 640
Nw $\frac{1}{4}$	9	13	2 160	All	31	15	4 638.76
E $\frac{1}{2}$	18	13	2 160	N $\frac{1}{2}$	33	15	4 320
E $\frac{1}{2}$	24	1	1 320	Sw $\frac{1}{4}$	17	1	5 160
E $\frac{1}{2}$	25	1	1 320	All	20	1	5 640
Se $\frac{1}{4}$	35	1	1 160	Sw $\frac{1}{4}$	20	2	5 160
W $\frac{1}{2}$	1	2	1 320.39	W $\frac{1}{2}$	29	2	5 320
Ne $\frac{1}{2}$	2	2	1 160.51	W $\frac{1}{2}$	32	2	5 320
Se $\frac{1}{4}$	21	2	1 160	All	2	4	5 612.40
W $\frac{1}{2}$	19	1	2 303.60	S $\frac{1}{2}$	3	4	5 320
W "	30	1	2 305.58	S $\frac{1}{2}$	4	4	5 320
All	5	2	2 632.48	All	7	4	5 611.56
W $\frac{1}{2}$	6	2	2 311.98	All	8	4	5 640
E "	7	2	2 320	All	9	4	5 640
W "	8	2	2 320	All.	17	4	5 640
E "	10	2	2 320	All	18	4	5 610.56
W "	11	2	2 320	S $\frac{1}{2}$ & nw	12	4	5 480
W "	14	2	2 320	All	21	5	5 640
E "	15	2	2 320	All	35	5	5 640
Nw $\frac{1}{4}$	17	2	2 160	All	1	6	5 628.34
Se $\frac{1}{4}$	22	2	2 160	All	2	6	5 313.02
E $\frac{1}{2}$	23	2	2 320	E $\frac{1}{2}$	10	6	5 320
Sw $\frac{1}{2}$	25	2	2 160	W $\frac{1}{2}$	11	6	5 320
N $\frac{1}{2}$ & sw	28	2	2 480	Ne $\frac{1}{4}$	15	6	5 160
Nw $\frac{1}{4}$	33	2	2 160	All	23	2	6 640
E $\frac{1}{2}$ & sw	18	2	3 470.75	S $\frac{1}{2}$ & nw	25	2	6 480
All	19	2	3 624.52	All	26	2	6 640
E $\frac{1}{2}$ & nw	30	2	3 473.94	Sw $\frac{1}{4}$	27	2	6 160
S $\frac{1}{2}$	29	2	3 320	All	28	2	6 640
Se $\frac{1}{4}$	32	2	3 160	W $\frac{1}{2}$ & se	34	2	6 480
W "	27	2	3 320	Sw $\frac{1}{4}$	1	3	6 160
Ne $\frac{1}{4}$	28	2	3 160	Se $\frac{1}{4}$ & nw	2	3	6 322.75
Nw $\frac{1}{4}$	34	2	3 320	S $\frac{1}{2}$	3	3	6 320
W "	14	3	3 320	Se $\frac{1}{2}$	4	5	6 320
S "	15	3	3 320	All	15	3	6 640
N "	22	3	3 320	W $\frac{1}{2}$	23	3	6 320
S "	23	3	3 320	Se $\frac{1}{4}$	8	2	5 160
E $\frac{1}{2}$ & sw	24	3	3 480	Se	8	4	6 160
Nw $\frac{1}{4}$	5	2	4 162	W $\frac{1}{2}$	17	4	6 320
S $\frac{1}{2}$ & ne	6	2	4 482.49	Se $\frac{1}{4}$	5	6	6 160
S $\frac{1}{4}$	14	2	4 320	E $\frac{1}{2}$	8	5	6 320
N $\frac{1}{2}$	23	2	4 320	All	9	5	6 640
W $\frac{1}{2}$ & ne	18	2	4 456.04	W $\frac{1}{2}$	21	5	6 320
All	19	2	4 604.64	W $\frac{1}{2}$	22	5	6 320
All	29	3	4 640	Nw $\frac{1}{4}$	23	5	6 160
E $\frac{1}{2}$	30	3	4 320	Ne $\frac{1}{4}$	27	5	6 160
E $\frac{1}{2}$	31	3	4 320	Sw qr	3	6	6 160
All	32	3	4 640	All	4	6	6 647.27
W $\frac{1}{2}$	8	2	5 320	N $\frac{1}{2}$	9	6	6 320
W "	9	2	5 320	Nw $\frac{1}{4}$	10	6	6 160
W "	6	14	1 313.48	Se	23	2	7 160

THE INDUSTRIALIST.

SATURDAY, APRIL 6, 1878.

The teams have been busy as bees this week.

The examinations show good work in the classes last month.

If things are to go on thusly, harvest will be two or three weeks earlier than usual this season.

Any Kansas teacher can have the INDUSTRIALIST free for two months on application therefor.

The attendance at the College prayer-meeting last night was large, and the exercises especially interesting.

The Mechanical Department is getting up the door and window-frames for Capt. Todd's new house, northwest of the College farm.

The applications for information respecting the Agricultural College are more numerous than ever before; and we again reprint the catalogue.

Prof. Shelton has seeded twelve acres to orchard and blue-grass, mixed, this year; thus showing his faith in the superiority of tame over wild grasses.

A more thorough, practical and sensible education for the farm and for business life can be obtained at the Agricultural College than anywhere else. Send for catalogue.

If you want a healthy spring beverage and happen to drink tea, use fresh lemon juice instead of cream, and scoop in the sugar. Try it and see if it doesn't help the "spring fever."

During the past week the raisers and lovers of fruit have been sitting on tacks, so to speak, "pinted" end up, as it were. There have been two frosts and one freeze, and yet the fruit is generally reported as safe and sound.

Considering the thousands of persons so thoroughly interested in the temperance question, it seems strange that the tinkling tones of the Moffet bell-punch are not heard in the towns of Kansas, and, likewise, the clinking of the silver revenues in the city coffers. There is such a thing as talk ending in talk.

Mr. Winne has the cellar of the new building excavated and the trenches about ready for the footing courses. Loads of stone and sand are making their appearance, and it won't be many days before the foundations are started. Mr. Carr has fixed the grade line by directing the main floor to be placed three and a half feet above the natural surface at the north door.

The eastern papers are full of notices of parties emigrating to Kansas; and so extensive is the disposition of people to come to the best State in America, that the eastern press feels called upon to do all sorts of lying in order to stop the movement. But there are two facts of greater power than their articles, viz., the over-crowded population of the East and the fertile soil of Kansas. Selah!

The chap who takes his trouble in advance and goes around worrying people with conundrums, is on a new trail. He says that two hundred thousand immigrants will settle this season in the western end of Kansas; some of them will rely on sod corn for grub; and he wants to know how loud the call will be eighteen months hence for a special session of the Legislature to furnish "relief?" Any gentleman meeting that chap will please have the kindness to choke him.

Mr. L. R. Elliott, agent for the sale of the College lands, is furnishing a series of articles in which will be set forth full and detailed information regarding the lands received from the United States, those sold, and those offered for sale. The thread of his discourse seems a little broken when one strikes the nonpareil in the present article, at least for the general reader. But the information is invaluable to those who have bought from the College; and before Mr. Elliott is through, any one who wishes can determine the ownership of each tract named. Beside the publicity thus given to the status of the College lands, these facts will thus be put in a shape for general reference.

The Webster Society met as usual on Saturday evening, March 30th. Our President being absent, the Vice-President, A. N. Godfrey, took the chair. As the first number of the *Webster Reporter* was to be presented this evening, the debate was passed over. Extemporaneous speaking produced much excitement among some of the members. The question of "Spiritualism" was sharply discussed, both sides seeming to have earnest champions. The paper was next presented by Mr. Godfrey. This struck your reporter as a decided success, and seemed to be enjoyed by all present. These papers will be read every week. Several visitors were present, among them a number of young ladies.

REPORTER.

There is a fine opening for some genius to make a fortune by patenting a new mode of sealing envelopes. At present the gum-stick'em usually covers three-fourths of the flap and when moistened securely seals the envelope, leaving openings at the ends into which the receiver of the missive can insert the blade of a knife and rip the thing open. In spite of the great care with which many persons close these openings, making them tighter than Julius Caesar on a bender, there still are numbers of people who don't close them, and who do leave the envelope so that it can be torn open by tearing the paper. This should be stopped. The envelope might be made of armor-plates and the flap riveted, then the receiver would know that he couldn't get it open, and would take it to a blacksmith at once.

The following are the resolutions adopted by the Alpha Beta Society two weeks ago, looking to a joint meeting of the two College literary societies. Reference was made to these resolutions in the last report of the Alpha Beta Society:

Resolved, 1st. That, for the benefit of the members of this and the Webster Society, we request the Webster Society to unite with us in a joint session to be held on the evening of April 13th, 1878.

2d. That the programme of the evening consist of literary and musical exercises.

3d. That the question for debate shall be selected by the Presidents of the Societies.

4th. That each Society provide for one speaker on each side of the chosen question.

5th. That each Society provide for one declamation, one essay, one select reading, and one paper.

6th. That a committee of three from our Society be appointed, whose duty shall be to select persons to fill the respective duties.

7th. That the Presidents of the two Societies choose a chairman for the evening.

8th. That we appoint a committee of one to confer with the Websters at their next session.

ENTERPRISE ITEMS.

Onions, rhubarb and other spring "fruit" are in the market.

The Doctors Vail have moved into the Davidson house, on College Hill.

Dime novels have caused three of the young Wyandotte bloods to run away.

A thirty-seven-pound catfish was the principal attraction in front of Briggs' last Monday.

Postmaster Pillshury is building an addition to his house, and beautifying the premises generally.

"Experience is the experience that the experienced man experiences in experiencing his experience."

Col. Allen, of Ottawa, general manager of Sedalia division of the M. K. & T. road, and wife, were in the city last week, visiting Prof. Ward's family.

Clair Patee has returned from his trip as advance agent for the Andrew bell ringers. The old agent having recovered, resumed his position. Clair brings back an excellent recommendation signed by all the members of the troupe.

Last Friday boys snow-balled each other, while in the yards the peach and plum trees were in full bloom, sending forth their fragrance in the midst of a violent snow-storm which raged nearly all day. A freeze was expected, but it came not. Truly, Kansas has a remarkable climate.

NATIONALIST ITEMS.

Mr. J. T. Ritchie returned, Tuesday, from an extensive tour East.

Ten car loads of horses were shipped from Cincinnati last week, for the British army. More are wanted.

Some fine evergreens are to be sent by Mr. Odell for the new park, and there are to be trees set out on the south side of the walk that goes to the depot.

The European war is creating an extra demand for really good horses, and so many will be exported that the price must rule high for some years. Our farmers should breed up with care.

The French commission reports that the firs and pines, with their pinnacle tops and electric condition, have the power of precipitating most general moisture from the atmosphere and the greatest rainfall from the clouds.

The Union meetings begun by the evangelists have been continued by the home pastors. A great deal of interest has been manifested, and many have been awakened. Prayer-meetings have been held every afternoon at three o'clock, in the Baptist church, and union services in the Presbyterian church, except Wednesday night, when the churches held their regular prayer-meetings.

In a day or two we shall publish an extra containing the constitution and ritual of the new temperance order called Temperance Volunteers, together with an address by the Executive Committee of the Organizing Phalanx, giving the reasons for starting it. Competent judges who have examined it, think it will be the most efficient temperance order ever constituted. Persons desiring to examine it, can procure copies by applying at this office, or addressing M. L. Ward, Chief Secretary.

PRESS NOTICES.

The INDUSTRIALIST has a neat, new heading, showing the College buildings at Manhattan.—*La Cygne Journal*.

The Manhattan INDUSTRIALIST comes to us with a beautifully-engraved heading. It is one of the neatest papers in the West.—*Edwards County Leader*.

The Manhattan INDUSTRIALIST has a new head, in which is shown the entire grounds and buildings of the Agricultural College, at Manhattan.—*McPherson Independent*.

The Manhattan INDUSTRIALIST came out last week with a new head, showing the College building and grounds. It is now in order for Kansas papers to comment on this fact.—*Cherokee Banner*.

The INDUSTRIALIST, the well-edited organ of the Kansas State Agricultural College, has had an elegant new "head put on it." Anderson feels proud of it, and asks some one to fan him—gently.—*Independence Kansan*.

The brightest, ablest and worthiest, big or little newspaper in Kansas is the INDUSTRIALIST, published at the State Agricultural College, at Manhattan, and edited by Hon. John A. Anderson, President of that institution.—*Council Grove Republican-Democrat*.

J. R. Hallowell is looked to deliver the oration before the graduating class at the next Commencement exercises of the Agricultural College, May 22d, 1878. They show their good sense in thus selecting one of the best orators in the State.—*Cherokee Banner*.

The INDUSTRIALIST, published at Manhattan, in the interest of the Agricultural College, came to hand this week adorned with a new heading and otherwise improved. The INDUSTRIALIST has done much toward working up patronage for the College, and deserves a liberal support.—*Eureka Censorial*.

The INDUSTRIALIST has had a "head put on it." It is a neat cut representing the grounds and buildings of the Kansas State Agricultural College, at Manhattan, where it is published. It adds greatly to its already neat appearance. The INDUSTRIALIST is a worthy little sheet, and we hope it will continue to prosper.—*Arkansas Valley Democrat*.

The INDUSTRIALIST is a saucy little sheet, and it has always been only a question of time when some one would "put a head on it." It has been done lately. A new head has been put on it, which includes a picture of the Agricultural College grounds and buildings. It is real neat, and the little fellow is as proud of his new head as other little fellows are of their first new boots.—*Concordia Empire*.

"A Little Plain Talk to Our Boys" was the title of an editorial in the *Farmer*, December 12th, 1877. Since that time we have seen it used as an editorial in a Maine paper, copied without credit in an Indianapolis journal, and in a number of Kansas papers it has been credited to "Exchange." It was brought to our mind to-day by seeing it in the *Educational Calendar*, credited to the Winfield Courier. To these older boys we would say, we feel like the man that remarked: "We always like our children if they are ugly."—*Kansas Farmer*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment," rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per

week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

Educational Labor.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

Remunerated Labor.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as its own interests require, and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely *promise* anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

CALENDAR.

Spring Term 1878.—Began Thursday, Jan. 3d, and will close Wednesday, May 22d.

Fall Term 1878.—Begins Wednesday, September 4th, and closes Wednesday, December 20th.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:35 A. M.

Going West..... 5:37 P. M.

FREIGHT ARRIVES.

Going East..... 4:50 P. M., and 9:50 P. M.

Going West..... 6:25 A. M., and 8:35 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending April 4th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

THE INDUSTRIALIST.

SATURDAY, APRIL 6, 1878.

KANSAS STATE AGRICULTURAL COLLEGE.

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J. E. PLATT, Prof. Elem'y English, Mathematics.
JNO. D. WALTERS, Teacher Industrial Drawing.
HON. D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MISS CARRIE STEELE, Teacher Instrumental Music.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PRACTICAL AGRICULTURE.

Second Year:—General principles of breeding; history and characteristics of breeds; adaptation of different breeds for special purposes and localities; implements of simple tillage; mechanical principles involved in their construction; action of the plow upon soil and subsoil; principles of draught; influence of different adjustments upon draught; use of the dynamometer; value of hoed crops in a system of husbandry; the cultivation of corn and roots; soils that need drainage how to lay out a system of drains; house drainage; sewerage.

Fourth Year: General view of agriculture, an ancient and modern; agricultural progress of the last century; relative advantages of mixed husbandry and special farming; the selection and arrangement of the farm with reference to the system to be pursued; rotation of crops; general advantages of a rotation; the best rotation with reference to disposition of labor, production of manure, and extermination of weeds; pasturage and production of grain and forage crops; manures, how best housed and applied; composting manures; commercial fertilizers; systems of feeding; stall feeding; steaming food; soiling; experiments in feeding; farm buildings; farm-houses; barns.

FARM ECONOMY.

Woman's Course, Fourth Year: Dairy products as human food; influences affecting character of milk; manufacture of condensed milk; the factory system and household plan of cheese-making; treatment of rennet; general process of cheese manufacture; subsequent treatment of cheese; butter-making; creameries; "deep" and "shallow" setting systems; general process of butter-making; packing and preserving butter.

DEPARTMENT OF BOTANY AND PRACTICAL HORTICULTURE.

This department embraces a course of instruction in the elements of botany, structural and systematic, with a constant attention to the practical application of botany to the farm, orchard, garden, nursery and forest; also a course of lectures on Landscape Gardening. The instruction is mainly given by lectures, accompanied by regular practical drill in all the work of the fruit, vegetable and flower gardens, nursery, orchard, vineyard and ornamental grounds.

The lectures in Practical Horticulture embrace the following and kindred subjects: The relation of atmospheric motion, moisture and temperature to horticulture; seeds, the means of collecting and preserving; propagation, by seeds, cuttings, layers, suckers, grafting, budding; care of young plants; improvement of varieties; management of commercial and farm nursery; modes of pruning; the orchard; fruit suitable for orchard and garden culture; the flower, vegetable and fruit garden; importance and mode of forest culture; shelter belts and their influence; weeds and useful plants; noting the species of trees worthy of culture, either for profit or ornament.

LANDSCAPE GARDENING.

The lectures on Landscape Gardening not only unfold the accepted principles of the art, but at the same time give special attention to such applications of the art as may be made universally available in laying out and improvement of farms and the homes of the people. These lectures are accompanied by a practical drill in the work of laying out and plotting grounds topographically.

CHEMICAL DEPARTMENT.

PHYSICS.

This includes a full consideration of the laws of mechanics, of liquids, gases and vapors, weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life. Text-book, Ganot.

INORGANIC CHEMISTRY.

This course is opened with a careful study of chemical forces and the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially with regard to their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.

This comprises a thorough study of the chemistry of organic compounds, the composition

of plants and of the various compounds derived from them. Constantly accompanied by laboratory practice.

CHEMICAL ANALYSIS.

In this course each student is furnished his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, mineral waters, commercial compounds, etc. After completing this course, he enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.

This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crops Feed."

METEOROLOGY.

Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken under direction of the Signal Service. Text-book, Loomis' Meteorology.

MINERALOGY.

This includes the study of the laws of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blowpipe analysis forms a very important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy.

HOUSEHOLD CHEMISTRY.

A course of lectures on this subject is yearly delivered to a class of young ladies. The course embraces the chemistry of cooking; the composition of food; bread; tea, chocolate and coffee; butter and milk; ripening and preservation of fruits, etc.

SPECIAL COURSES.

Are constantly in progress in Assaying, Pharmaceutical Chemistry and Photography.

ENGLISH LANGUAGE.

Words are simply tools used to express ideas; and, since the vast majority of our communications are made by the employment of spoken or written words, skill in using them is as profitable to the industrialist as dexterity with the needle is profitable to the seamstress. The direct aim of the course is to make the student skillful and intelligent in handling the machinery called language, just as an engineer handles a locomotive; and no drill will be omitted, or effort spared, to gain this end. Apart from the course itself, which is far more practical and complete than that usually found in literary colleges, the constant attention given this subject by all the departments, and especially the practice required in the printing classes, affords superior advantages to the student.

DRILL IN ENGLISH.

"As grammar was made after language, so ought it to be taught after language."—Herbert Spencer.

Drill in English embraces the following topics:

Sounds of the language; drill in producing the vocal, sub-vocal and aspirate elements with accuracy, distinctness and volume; vowels, consonants.

Letters: Form; power; rules for spelling, drill.

Words: Signification, properties, modifications, variations, relation and dependence.

Sentences: Drill in statement of ideas; description, clearness, terseness, vigor; business letters, discussion; capitalization; syllabication; punctuation; construction and analysis of sentences; elements, uses and names; criticism of compositions printed as written; proof reading; grammatical construction; superfluous words and clauses; drill in reading, speaking and penmanship.

Text-books: Webster's Academic Dictionary; Lee & Hadley's Advanced Lessons in Language.

Pupils deficient in spelling, etc., should enter the printing class, the printing-office being the work-shop of language.

STRUCTURE OF ENGLISH.

ELEMENTS OF WORDS.—The end aimed at in this study is to learn everything about words which will aid in their effective use. Among the topics included are:

Roots: What are they; their origin; their force and value as an element of language; the manner of their growth into different parts of speech.

Stems: Their derivation; their offices and properties; their relation to the other parts of words.

Prefixes and Suffixes: The several sources whence derived; the relation of their force or significance to those sources; explanation of the laws and principles governing their use along with stems.

Compounds: Their value; their properties and uses; the laws governing their formation.

Synonyms: Definitions; causes of their abundance in English; the principles to be observed in choosing among them, to express a thought.

Criticism: This constitutes a prominent part of the exercises of the pupil through his whole course in the study of English. It not only diversifies and enlivens the class-room exercises, but reduces to practice the principles of the structure of the language. By this means, the student acquires not only a knowledge of English, but readiness, skill and accuracy in speaking or writing it. The exercises in criticism embrace not only examination of selected matter, but original composition.

ELEMENTS OF SENTENCES.—The purpose in view in studying this subject is not to traverse the ground gone over in the study of grammar, but to fix in the mind of the student a clear understanding and remembrance of names, the properties and offices of the several classes of words entering into an English sentence, by showing him the reason of things; to make more simple, as well as interesting and practically useful, a study otherwise "dry and unprofitable" in many cases, by explaining the reason of the verbal forms and changes, the rules and maxims he is to remember and observe in his use of language. In the same manner he is conducted through a study of the mutual relations and dependencies of the several elements making up a sentence.

MATHEMATICAL DEPARTMENT.

Figures and lines, like words, are only instruments with which to convey ideas, or perform

operations that cannot be easily done without them. The arithmetical principles used in business are few and simple; but accuracy and rapidity in computation are only gained by practice. College graduates often fail to retain clerkships, not because they do not know why given operations are performed, but because they can neither add, multiply or divide with that habitual correctness which renders their work reliable.

DRILL IN ARITHMETIC.

The chief design of this study is to make the student expert in the use of numbers, as employed by the industrialist for profit. The occupation of a successful farmer demands the application of every principle of practical arithmetic, and is taken as a starting point, rather than that of an abstract system. Beginning with a simple cash account, book-keeping is gradually developed to the full extent of its real utility. The areas of fields, expense of crops, construction of houses, sales of produce, and investment of capital, involve all the fundamental operations, and those of profit and loss, commission, taxes, insurance, exchange and stocks. Following this line, the student, so far from hammering away at "pure" science draws from the mathematical store-house what he needs, and sees why he needs it. Accuracy of calculation and posting, rather than a mere comprehension of the principles, is aimed at. Besides the recitation-room drill in business forms, practice in the field is also given. Estimating the number of cords in a pile of wood said to be 100x4x4 feet is one thing; measuring a pile of wood through which any number of cuts may be harmlessly thrown, and in which four-foot sticks are the exception, is quite another and more difficult thing.

ARITHMETIC AND BOOK-KEEPING.

Is a continuation of the above, having the same purpose and adopting such methods as the necessities of the class indicate. Thorough instruction in the principles and forms of business law is given. It will be seen that this method of teaching book-keeping, besides ensuring arithmetical practice, develops practical skill in that important art.

ALGEBRA.

Algebra is included in the course as a preparation for the study of Surveying.

DRAWING.

The practical value of Industrial Drawing can hardly be overestimated, first, because its study is the best drill for the development of the perceptive faculties, which are the ones most employed in daily life; and, second, because the working classes make a far greater use of lines than they do of figures. A farmer follows a line when laying a straight furrow; the carpenter uses the square and rule twenty times as often as he does figures; and a woman in cutting a pattern, or deciding that one bonnet is prettier than another, does so by the line or "form." So that either in its direct application, or in the exercise of that taste which comes from skill in using lines, this branch of mathematics is quite as important as a means of "mental discipline" as is the branch of computation, and is of far greater daily use. The admirer system of Prof. Walter Smith, Art Director of Massachusetts, is thoroughly followed through the grades of Free-hand, Geometrical, Object, Model, Perspective, Mechanical and Topographical Drawing, during the terms indicated by the Course of Study. In addition, constant practice in the application of lines to metal and wood is furnished in the Blacksmith, Carpenter, Turning, Scroll-sawing, Carving, Engraving and Printing shops, and to fabrics in the Sewing Department.

PRACTICAL GEOMETRY.

Not one farmer in a thousand ever uses the transit in surveying his land, the testimony of the county surveyor being decisive in court; but every farmer makes countless applications of lines and angles in laying off fields, roads, gardens, planning houses, determining levels, etc. The object of Practical Geometry is to teach the properties and uses of angles, and to make the student skillful in the application of lines to the field by the use of such simple instruments as are always within reach, or within his ability to construct; and accurate in the transferring of plans to the grounds, board or block.

PRACTICAL SURVEYING.

The drill in the use of figures and lines given by the mathematical course as above indicated renders the mastery of surveying an easy task. There is no calculation made or formula used by the working engineer which cannot be readily understood and performed by a skillful arithmetician after proper instruction. The hand-book of the engineer is accordingly supplemented with such special guidance as is found necessary for a full comprehension of the mathematical principles and their applications; and extended field practice is required in the use of the compass, level, transit and theodolite.

STUDIES SPECIAL TO WOMAN.

Besides the studies already indicated, attention is called to the following:

SPECIAL HYGIENE.

As shown in the course, one term is devoted to the study of Physiology, from the text-book of Dr. J. C. Dalton. This is followed in the fourth year by a course of lectures to young ladies by Mrs. Cripps on the subject of Hygiene, embracing such applications of physiological truths and such instruction in hygienic matters as are valuable to woman.

FARM ECONOMY considers those affairs of the farm which usually come under the supervision of the farmer's wife or daughter, and which are not included in "gardening" or "household economy;" such as butter and cheese-making, dairy management, etc. A course of lectures is delivered by the Professor of Practical Agriculture. See heading, "Farm Economy."

GARDENING is included in Practical Horticulture. See heading, "Landscape Gardening."

HOUSEHOLD CHEMISTRY. See heading, "Household Chemistry."

HOUSEHOLD ECONOMY

Follows Household Chemistry and consists of lectures by Mrs. Cripps in the art of house-keeping, embracing cookery, domestic management, and kindred topics. Many elderly gentlemen sufficiently know, and more young gentlemen will duly discover, that systematic knowledge of how cooking ought to be done is luminously different from the ability to do it. Instruction without practice can effect but little. Accordingly, a kitchen

laboratory has been completely furnished, and affords every facility for drill in the art of cooking. This drill chiefly differs from that of a kitchen in the respect that after a girl has learned to wash dishes or pare potatoes she is not kept everlastingly at either. After full trial we have found it just as feasible to give this practice, with profit and pleasure to the pupil, as it is to give laboratory practice in chemistry — and no more expensive.

GENERAL INFORMATION.

BUILDINGS.

Old College Building.—Stone, three stories, 40x60, nine rooms, used for library, cabinet, and dormitories. One mile distant from following:

College Building.—Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the Literary Departments.

Laboratory.—Cross form, 109x109, one story, stone, containing a lecture room, office, balance room and four large laboratories.

Horticultural Building.—Stone, one story and basement, 31x80, five rooms for recitations, workshop, etc.

Mechanical Building.—Stone, 38x102, two stories, seven rooms, containing Wood Shops, Printing, Telegraph, Sewing and Instrumental Music Departments.

Barn.—Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc.

Blacksmith Shop.—Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.

A Farm of 185 acres, thoroughly equipped and cultivated. Shorthorn, Devon, Jersey and Gallo-way cattle; Berkshire and Essex swine; etc., etc.

A Nursery of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyards, small fruits, etc.

The Chemical Department, with its new Laboratory and appliances, is practically equal to any in the United States.

The Mechanical Department has twenty-five kits of carpenter's tools; lathes, scroll-saws, etc.; and a well-furnished blacksmith shop.

The Sewing Department is well equipped with machines and appliances.

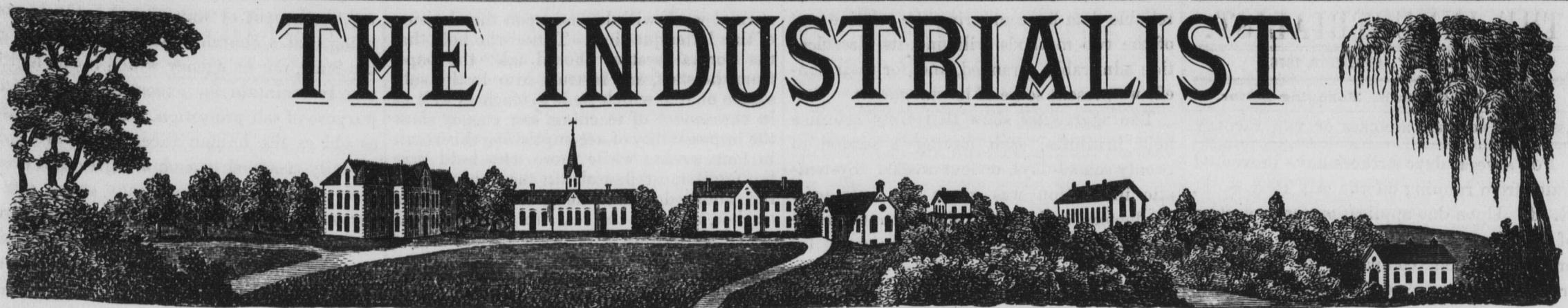
The Mathematical Department is supplied with the appliances necessary for study and practice in surveying.

The Printing Department has twenty-six pairs of cases; presses, etc.

The Telegraph Department has four miles of line, twenty-five instruments, and every facility for practical instruction.

English Language.—The direct aim of the course is to make the student skillful in handling the machinery called language, just as an engineer handles his locomotive. Drill in English, History of English, Structure of English, Study of Words, and Rhetoric. Constant practice in the class room, and, if desired, at the printer's cases.

THE INDUSTRIALIST



VOL. III.

MANHATTAN, KANSAS, SATURDAY, APRIL 13, 1878.

No. 52.

THE INDUSTRIALIST.

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INDUSTRIAL EDUCATION.

The real value of an education to the student depends upon two things: First, the practical worth of the knowledge taught; and, second, the degree in which he makes it his own. Hence, the ability of any institution to give a practical education depends upon the kind and aim of the knowledge it teaches, and upon the thoroughness of the instruction therein. The State Agricultural College was directly endowed by Congress, and is guided by the State, for the specific purpose of furnishing to the industrial classes of Kansas a "practical" education, that is, "one fit for use." As its name indicates, and as the statistics of the industries of the State require, its chief work must be that of giving a useful and useful education to those who will engage in farming; and, therefore, the Farmer's Course must, from the nature of the case, be its main one.

FARMER'S EDUCATION.

Words and figures are merely instruments with which to record ideas. They are not themselves ideas, nor should they be made the chief end of an education. As a wagon is necessary to haul grain, so are they a necessary part of an education; but as the wagon is not the grain, so they are not the knowledge which the farmer converts into money. Hence, the classics and higher mathematics are not taught. But it will be noticed in the following course that so soon as the pupil acquires working skill in the use of the English language as a tool, and of figures and lines as mathematical tools, those arts and sciences which present knowledge that has a cash value to the farmer are taught as rapidly as their importance and thorough acquisition will permit. Studies numbered (1) and (4) in the second, third and fourth years are the spine of the course, to which the others are as ribs and muscle.

FARMER'S COURSE.

FOURTH YE'R.	THIRD YE'R.	SEC'ND YE'R.	FIRST YE'R.
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Drill in English.			
2. Drill in Arithmetic.			
3. Industrial Drawing.	3. Industrial Drawing.	3. Industrial Drawing.	3. Industrial Drawing.
4. English Structure.	4. English Structure.	4. English Structure.	4. English Structure.
5. Adv'd Arithmetic, Book-keeping.			
6. U.S. History, Industrial Drawing.			

WOMAN'S EDUCATION.

Nearly one-half of our students are females, and the Woman's Course is prepared expressly for their liberal and practical education. We have no doubt whatever that practical men and women, who understand what it means and what it seeks to do, will fully endorse it.

WOMAN'S COURSE.

FOURTH YE'R.	THIRD YE'R.	SEC'ND YE'R.	FIRST YE'R.
Spring. Fall.	Spring. Fall.	Spring. Fall.	Spring. Fall.
1. Physiology.	1. Physiology.	1. Physiology.	1. Physiology.
2. Rhetoric.	2. Rhetoric.	2. Rhetoric.	2. Rhetoric.
3. Algebra.	3. Algebra.	3. Algebra.	3. Algebra.
4. Practical Agriculture, (elementary).			
5. Physics.	5. Physics.	5. Physics.	5. Physics.
6. Industrial Drawing.	6. Industrial Drawing.	6. Industrial Drawing.	6. Industrial Drawing.

MECHANIC'S EDUCATION.

Because of the adaptedness of the leading course to the wants of the intelligent mechanic, it has been found practically unnecessary to diverge from the Farmer's Course. Additional studies, specially adapted to the mechanic's use, will be furnished in a Post-Graduate's Course.

Technical Education.

The recent address of Prof. Huxley before the Workingmen's Club of London ought to be printed in full in every newspaper of the English language on the globe. It abounds in the most important counsel to all workers, calling their attention to the honorable nature of labor, and its technical and most important needs. The learned Professor is decidedly practical in his views. He believes that boys should be taught that which they will use when they become men. He remarks upon the universal error of common schools, which fail to give boys any training in the use of hand or fingers, and which slur over the rudiments hurriedly to drag the pupil on to the higher and more abstract studies that can never really benefit him. For the training of the thousands of boys who are to pursue trades in mature life, the Huxley advice is essential, some manual dexterity or "handiness," and a knowledge of reading, writing and the fundamental rates of calculation. For the higher trades some knowledge of scientific principles should be added, also of drawing, and ability to read French and German in order to keep abreast of the discoveries abroad. This latter specification is much more necessary in England than here, but omitting this the essentials for an intelligent workingman can be obtained at any good common school in this country, and yet a workingman so sensibly and intelligently educated is a very rare object among us.

It seems to be distinctive of our system that it gives our youth very little that they want, and a most liberal abundance of that which they do not want. Prof. Huxley further declares it to be unnecessary and unwise for workingmen "to have school instructions carried so far as to encourage bookishness," and he protests directly against a delusion which has gained most baleful ground in this country, to-wit: "The mischievous delusion that brain work is, in itself and apart from its quality, a nobler or more respectful thing than handiwork." All labor is, and should be, honorable in the degree of its worthy performance only, and for no pretentious distinctions that may be appended to it.

We may conclude by calling the attention of all thoughtful readers to the learned lecturer's definition of the result to be sought for in education. "The most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, whether you like it or not." This is self-discipline, the most precious and useful of all education; but now, alas, how neglected by those upon whom rests the training of the young.—*Topeka Blade*.

A New Idea.

There is to be an educational exhibit at the next fair of the Agricultural Society of Lyon county. This is a move in the right direction. Why should not our schools be represented at our county fairs as well as our farms? Are not our children of as much importance as our sheep, cows, or pigs? To show what Lyon county is doing, we copy from the *Hatchet* the premiums offered for the best work done by any one school:

For the best educational display, Webster's Unabridged Dictionary; for the second-best educational display, Webster's Pictorial Dictionary; for the third-best educational display, map of Lyon county; for the best scientific collection, Biographical Dictionary; for the second-best scientific collection, a three-lens microscope; for the third-best scientific collection, a map of Kansas.

The following premiums are offered to any one pupil in the county, under twelve years of age:

For the best set of manuscripts, Farm Ballads; for the second-best set of manuscripts, The Farm and Fireside; for the third-best set of manuscripts, Routledge's Book of Animals.

The following premiums are offered to any pupil over twelve years of age:

For the best set of manuscripts, Redpath's Large History of United States; for the second-best set of manuscripts, Words, their Uses and Abuses; for the third-best set of manuscripts, Gow's Manners and Morals; for the best map of Lyon county, drawn from memory, by a pupil under fourteen years of age, a set of drawing instruments worth \$1.50; for the best map of the State of Kansas, drawn from memory, by a pupil under twenty-one years of age, A Kansan Abroad; for the best map of the United States, drawn from memory, by a pupil under twenty-one years of age, History of the United States; for the best specimen of free-hand drawing, by a pupil under twenty-one years of age, a set of drawing instruments worth \$1.50; for specimens of penmanship showing greatest improvement in the shortest time, a tourist writing-case.

We will add to the above the following premiums to any pupils under eighteen years of age:

For the best set of farm accounts, arranged in the form of a farmer's memoranda book or day-book ledger, the Annals of Kansas; for the second-best set of farm accounts, arranged in the same manner, A Kansan Abroad; for the third-best set of farm accounts, arranged in the same manner, Felter's Elements of Book-Keeping, with a set of account books; for the best set of accounts illustrating double-entry book-keeping, A Kansan Abroad; for the second-best set of accounts illustrating double-entry, Felter's Complete Arithmetic; for the third-best set of accounts illustrating double-entry, Felter's Elements of Book-Keeping, with a set of account books.

For special information in regard to the conditions of competition, address O. B. Wharton, Emporia, Kansas.—*Educational Calendar*.

Farmers' Boys.

For farmers, the country wants the most energetic, thorough-going and wide-awake boys that can be found. Hence, if a boy is blessed with that crowning concomitant which moves the world—brains—let him become a farmer. Brains constitute the great desideratum in agricultural science at the present day. Fifty years ago a farmer was expected to perform every manual labor on the farm by the exercise of muscular force, while at the present day he needs brains more than muscle to enable him to manage labor-saving tools and implements with skill and efficiency. When the labors of the farm were nearly all performed by the laborious and fatiguing application of human force, farming was irksome and drudgery. But now, teams and steam power respond to the bidding of the tiller of the soil, and agriculture is the most agreeable pursuit one can desire. True, at some seasons of the year farmers are required to labor early and late for several days. Then, again, perhaps for weeks, they will have easy times.—*Dirigo Rural*.

THE moistening of coal with a view to increase its heating effect is frequently practiced. A calculation in a German journal, based upon a careful consideration of the products formed and the heat generated in their combustion, together with the specific heat of the products of combustion and of the air required, as well as of the heat rendered latent in the steam, demonstrates not only that less heat is obtained from the coal, but that the temperature produced is lower than with dry coal, and that there is consequently a waste of fuel. It is admitted that in exceptional cases of dusty coal it may be advisable to moisten it to render it more compact, and promote the access of the air in burning.—*Exchange*.

AT a school in the country the sentence "Mary milks the cow," was given out to be parsed. The last word was disposed of as follows: "Cow is a noun, feminine gender, singular number, and stands for Mary!" "Stands for Mary!" said the excited pedagogue; "how do you make that out?" "Because," answered the intelligent pupil, "if the cow didn't stand for Mary, how could Mary milk her?"—*Cadet*.

HUNDREDS of teachers in the East are looking toward Kansas with a view of evangelizing the Great American Desert.—*Commonwealth*.

FREE schools flourish in Japan. The latest educational report shows that two million children are receiving instruction in the schools, that number representing six per cent of the whole population of the empire.

IN China agriculture is considered the noblest of arts to which man can attain. To such a degree is the worship of this art carried that the annual fete day of agriculture is attended by the Emperor in person, who on this day wields the plow.

THE manufacture of paper from wood has reached the altitude of perfection in Canada. The superintendent of a mill up there says a tree is cut down and shovels into one end of the mill, and five minutes later there is a neighbor at the other end to borrow the paper.—*Danbury News*.

THE best teacher is not the one who helps his pupils, but the one who helps them help themselves. The only true education is self-education. The mind can be filled from without, but it can only grow from within. That only, is effective teaching, which suggests, prompts, inspires.—*Northern Indiana Teacher*.

MORE to the Chinese than to any other nation the telephone has been a blessing. Owing to the fact that the Chinese language has no alphabet, the telegraph has never been available in China; but now that the telephone has been discovered, it has been seized upon, and five hundred miles of telephone wires are said to be already in operation.

A SUMMARY of the annual report for 1877, of the gigantic manufactories belonging to the renowned firm of Krupp, at Essen, has been published. The refined and cast-steel fabrication employs no less than 8,500 men, 298 steam engines, 11,000 horse power, and 77 steam hammers. Every twenty-four hours it turns out two and a half German miles of railway rails, together with a corresponding amount of wheels, springs, axles, and the metal work of the carriages. So much is done by this famous firm in the service of peace. For war business it every month completes 300 cannon of divers calibre. Since 1847 it has turned out more than 15,000 cannon. Twenty-four thousand gas flames are lighted every night. A railway of 37 miles in length, employing 24 locomotives and 700 cars, facilitate the internal intercourse, and the establishment contains 44 telegraph stations within its boundary.—*Exchange*.

Thought Training.

The world is indebted for nine-tenths of its valuable knowledge, its improvements, and progress generally, to men and women who have trained themselves to think in a systematic and consecutive manner. No man has ever become eminent in science, art, literature or farming, who was not a profound thinker, who did not well examine and compare all the items pertaining to the subject, to know whether in their various relations they sustain the principle which public opinion upholds as being true. It is not a very uncommon thing that a principle has been enunciated by men who have pet theories to support, and where it is plain to a thinking, unbiased mind that some of the important items of the theory are in direct antagonism to the principle, and therefore false—or otherwise the principle itself has no foundation in truth.—*Exchange*.

THE INDUSTRIALIST.

SATURDAY, APRIL 13, 1878.

JNO. A. ANDERSON, Managing Editor.

ASSOCIATE EDITORS, MEMBERS OF THE FACULTY.

FOR several days strikers have prevented trains from running on the A., T. & S. F. R. R. Upon due application for protection of life and property, Governor Anthony ordered out four companies of the State's troops and protected the engineers who wanted to earn a living by running trains for that company, from the threats of other engineers who didn't. The experience at Pittsburgh ought to satisfy most people that stealing and murder under the name of strike are nothing but stealing and murder, and that riots are dangerous things. We are glad that Kansas at least has a Governor who will enforce the laws. If the laws are wrong, repeal them; if men don't want to work for a company, let them quit; but the people have rights as well as individuals, and the greatest of these rights is that law shall rule.

Common School Studies.

The INDUSTRIALIST finds fault with the studies generally pursued in our common schools. It says:

"All admit that the existing course is designed to give pupils that training which is deemed of most value in the work of the learned professions, *** and from which any advantage derived by all other students is indirect and accidental."

Let the INDUSTRIALIST give us a course of study such as it thinks the common schools of this State should adopt, and we can better judge of the comparative merits of the two. Ninety-nine hundredths of our common schools give their pupils instruction in reading, writing, the elements of arithmetic, geography, and grammar, and little or nothing more. It seems to us that these are studies quite as essential to the farmer or the mechanic as to the member of the learned professions.—*Lawrence Journal*.

It is impossible to present within the limits of a single article the reasons for the changes which, in our judgment, should be made in the course of study followed by the public schools: first, because of the importance of the principles upon which the course should be built; and, second, because of the difficulty of drawing the line between the useful and useless details of the several branches of knowledge. So large a subject cannot be discussed in a paragraph, and one of such vital interest to Kansas schools should either be thoroughly considered or else not at all. If the *Journal* and our readers will grant time, we shall be happy to present our views as circumstances permit. A preliminary article is given in another column on the point that the powers of the State in educational matters may be quite different from those of unorganized society.

County Normal Institutes.

The last Legislature adopted the method of training teachers for its public schools in institutes held by the several counties, instead of making appropriations for the State normal schools. The measure was keenly debated, strongly urged, and vigorously opposed; and any facts showing its workings will interest educators and especially members. We have received from State Superintendent Lemmon a tabular report of the county normal institutes held in Kansas during the year 1877, which shows the counties and towns where held; dates of opening, closing, and number of days each was in session; name and salary of conductor; names and salaries of instructors; lecturers; average attendance by weeks; whole number enrolled; amounts and sources of receipts; amounts expended; balance on hand, or deficit. Those desiring

reliable data for comparing the relative cost of the two methods will find its classification admirably arranged, and for their benefit we present some of its statements.

The aggregates show that sixty counties held institutes, each having a session of twenty school-days, or four weeks. Systematic instruction was given by sixty paid conductors and 142 paid assistants, while discussions of special topics were made by 164 lecturers, making a corps of 202 regular instructors, or 366 in all. The amount paid for salaries was \$10,959.34 and for sundries \$3,823.17, or a total cost of instruction of \$14,782.51. The receipts from examination fees were \$6,990.00; from registration fees, \$4,495.75; from the State appropriations, \$2,800; and from county appropriation, \$2,030.28; total \$16,316.13, leaving a balance on hand of \$1,533.62. Number of pupils enrolled, 4,605.

A common but unsatisfactory mode of estimating the cost of a method is that of showing the expense per pupil, which in this case would be the very remarkable sum of \$3.25 each, supposing the whole number to have been in constant attendance. The statistics of the normal schools of the United States would show a cost per pupil many times greater. The average of the aggregate attendance is not given, but in looking at the average attendance of the third or fourth week, we have not found a single instance in which it was less than during the first or second week, clearly showing that the interest was fully maintained to the end. And we should think it safe to say that at least 3,500 pupils attended during the whole four weeks; which would be at the rate of say 400 pupils per year at one normal school, costing for instruction \$37 per capita, which is still remarkably low.

But, on this latter supposition, there is a vast difference between training in the best modes of teaching 400 persons and 3,500 persons. If 3,500 teachers are doing better work because of these institutes, then certainly the State is much more the gainer than if but 400 had been thus benefited. There is also to be considered the difference between the number of teachers actually reached from these sixty centers as compared with the number who would be reached from two or three centers, to say nothing of the cost of traveling and boarding to the pupils themselves.

In comparing the two systems, the point at which the legislator and tax-payer will most look is the fact that under the normal-school plan the State pays all the expense of instruction, while under the institute method the appropriations from State and county were but \$4,830.38 or one-third of the total cost, equal to an expense to the State of \$12 per pupil at the normal school.

Everybody knows, however, that the worth of an article does not consist in the number of dollars paid for it. Any gentleman disputing the proposition can have a million dollars of our personal notes at par! And in this case the point is not which system costs the smallest total, but which relatively gives the most practical knowledge and skill to those teaching our public schools. The discussion of that question will involve the further question, What is the true function of the State in training teachers for its schools? On the one hand does normal work include teaching the future teacher that knowledge of language, numbers and other matters which he is to impart; or, after he has obtained this knowledge elsewhere, should it mainly consist in showing and drilling him in the best methods of teaching? The scope and aim of

normal work will depend upon the decision of this latter question. Those who hold that the normal system should take the pupil from the start, and instruct him in the substance of that which he is to teach as well as in the modes of teaching, can clearly show the impossibility of accomplishing this result in four weeks; while those who hold that the pupil must first obtain the substance of the knowledge that he is to impart as a teacher, and that the real aim of the normal system is to train him in the best modes of teaching, can as clearly show that in a systematized month the essentials of the best practice can be taught.

There is nothing in the statutes of Kansas which prevents a man from holding either of these opinions, and according to the one he adopts will be the conclusion reached as to which is the proper duty of the State in this matter. But, differ as men may and certainly will on this question, we fancy that all will agree respecting the unexpected success of the county-institute plan under Superintendent Lemmon's management, its extent, the corps employed, the number reached, the value of the instruction given, and its remarkable cheapness.

Education by the State. No. I.

The Powers of the State Different from the Powers of Society.

Underlying the whole theory of education is the belief that he who possesses knowledge has greater ability than he who does not; or, that "knowledge is power." It is upon this foundation alone that the right of the State to levy taxes for the support of public schools can be grounded. If, by means of these schools, the State can secure to its future citizens such an intelligence as shall make them wiser voters, or the producers of a greater wealth, than they would otherwise be, then, for its own safety, permanence and prosperity it has a right to employ the schools as a necessary means for securing such intelligence and results.

We are not discussing the right of society, but that of the State. Any individual has an unquestionable right to maintain any kind of a school for teaching any conceivable thing that is not hurtful to the general welfare, just as any number of individuals can lawfully maintain a church or asylum. Their right to do these things rests upon the fact that the money or labor contributed is the sole property of the contributor; and upon the further fact that every man may lawfully dispose of his property as he pleases, provided such disposition does not violate the equal rights of others.

But the State is only a part of society, or rather it is society organized for the specific purpose of self protection, in the larger meaning of this term, and possesses only those powers which are necessary to effect this single purpose; whereas, the individuals composing society have broader fields and many other powers. The rights and functions of the State rest upon and are limited by its specific mission as a corporate body, while those of individuals rest upon and are only limited by the inherent liberty of men. A Masonic lodge has a right to tax its members, because in becoming a member the individual delegates that right to it. But the State has no right to tax a man who is not a Mason for the benefit of the lodge, because a Masonic lodge neither is nor claims to be an agency of the State. When an individual agrees to pay fifty dollars towards the salary of a minister, his right so to do springs from the inherent right of men to use their own property as they choose; but, under the usual terms of church organizations, the church itself has no right to tax the member, because he does not delegate to it that power when he becomes a member. Neither has the State the right to tax the member for the benefit of the particular church, much less the right to tax persons who are not members to the premises.

for the benefit of any church; the reason being that a church is neither a creature of the State, nor an agency which it can legitimately maintain for executing the specific purpose of self protection. These truths are as old as the human race. They are universally accepted to such a degree that even their simple restatement may strike some persons as wholly useless. Yet they constitute the chief glories which the world has received from numberless wars, though now they nestle before our eyes as modestly as violets on the battle field of Waterloo.

In considering the question of education by the State, it is very easy for men to assume that an act which is clearly legitimate when performed by unorganized society, is therefore and equally legitimate when performed by society in its organized capacity as a State. It is more than easy to assume that a result which is clearly beneficial to some individuals or classes of society, and which therefore it is certainly expedient that society should secure, is equally beneficial to the State as a whole, and therefore equally expedient for the State to secure by its corporate action. It is doubtful whether there be any other field alike occupied by society and by the State, as is that of education, in which the line between the true powers of individuals, whether separately or in associations, and the true powers of the State as a corporation, has been so faintly and waveringly drawn. In the discussion of no public question is the distinction between the functions of society and those of the State more completely ignored; the advantages to individuals and those of the masses more recklessly intermixed and confounded; or the assumption more triumphantly made that because a given act ought certainly to be done by unorganized society, therefore it as certainly ought to be done by the State as a corporation.

If the purpose and powers of the State are precisely those of society, then the assumption is correct; but in that case we can see no practical difference between unorganized society and the State. And if there be no difference, then, on the same ground that the State should levy taxes for the support of schools, it should also levy taxes for the support of churches or charitable associations—a conclusion which no American will admit. But if there is a real difference between the aim and functions of the State as a corporate body and those of unorganized society, then the power of the State in the conduct of its educational operations may be a very different thing from the power of society in the conduct of its educational operations. The object which the State should legitimately seek by its system may be quite different from that which may legitimately be sought by society; methods that may be inexpedient for one may be exactly expedient for the other; and branches of knowledge which society, in the voluntary conduct of law or medical schools, may properly and praiseworthy include among the studies of these schools (because of their adaptation as means to secure a desired result), may nevertheless have no proper place whatever, either directly or indirectly, among the studies of the State's system. We are not now affirming that they have or have not such a place, only that they may not have; and are seeking to call attention to the broad distinction which we believe to exist between the powers and legitimacies of individuals and those of the State. And the moral with which we drop the matter for the present is, that while we certainly and heartily concede the right of every man to buy and use a gold tooth-pick, and the equal right of churches to buy and use silver pitchers at their sacred feasts, we fail somehow to see that the State has an equal right, or that it would be equally expedient for the State, to levy taxes in order to furnish each pupil of the public schools with a gold tooth-pick or silver pitcher. Owing to the dimness of our logical eye, we can't see just how that conclusion is hitched to the premises.

THE INDUSTRIALIST.

SATURDAY, APRIL 13, 1878.

There were fifty-eight students in the first rank during the past month.

Any Kansas teacher can have the INDUSTRIALIST free for two months on application therefor.

President Anderson went down the Kansas Pacific yesterday morning, and will probably return this evening.

Mr. Wm Dent, at E. B. Purcell's, is agent for Prentis' "A Kansan Abroad," which he sells at publisher's price, \$1.25.

Mr. Parker reports his trees so full of buds that that if a frost should nip nine out of ten there would still be a splendid yield.

Jim Lane's "gentle zephyrs" have been vigorously around this week in an emphatic sort of way that didn't suggest visions of the listless repose of Italy.

A more thorough, practical and sensible education for the farm and for business life can be obtained at the Agricultural College than anywhere else. Send for catalogue.

Gentle Annie is hereby informed that the springtime has come; and all promises maturing "when the springtime comes, gentle Annie" had better be looked after.

Stewart has shifted the cases and things around in such a new and airy way that the INDUSTRIALIST feels like putting on frills and graces. Fetch along your hot weather.

The attention of persons desiring instruction in the art of phonography, either for use as clerks or reporters, is called to the advertisement of Mr. C. H. Torrington, appearing in another column.

Prof. Shelton has transplanted his Berkshire and Essex swine from the piggy to the blue-grass and timothy field. The hogs seem to enjoy the change, and are verily as happy as "pigs in clover."

A young man in Franklin, Tennessee, says of the INDUSTRIALIST: "It is one of the most interesting sheets I ever read. I thought I could enter your school in August, but find it impossible to do so. Please accept many thanks for the paper."

The work on the new building has been pushed right along this week. Several teams are hauling sand and stone, a half dozen or more men are working on the foundation, and a decided business air pervades the premises.

If it is logical to judge the literary societies by the reports which we have not received of their proceedings, the conclusion would be that they are not doing anything—which conclusion we know to be incorrect, only the reports don't show it.

L. R. Elliott starts to-day for Atlanta, Georgia, where he will represent Kansas in the National Sunday School Convention. He will be absent for a week or two, but another of his articles "Concerning the College Lands" will appear in our next issue.

College Drill Club met as usual last Wednesday night. As there were but few members present, the meeting was mainly a business one. Officers elected for the ensuing term as follows: President, G. L. Platt; Secretary, John Mann; Marshal, A. E. Wilson. Members are requested to attend more regularly.

REPORTER.

The Riley County Agricultural Society has elected the following officers for the ensuing year: N. A. Adams, President; C. C. Duncan, Vice-President; J. Q. A. Shelden, Secretary; J. W. Uptegrove, General Superintendent. Directors, A. W. Rollins and S. M. Ferguson. The Sixth Annual Fair of this Society will be held from September 24th to 27th, 1878.

Although the union religious meetings in town have closed, the spirit of thought and work which was awakened by them has by no means subsided. The churches are about beginning a series of meetings in their respective places of worship. They have been impelled to this step by the feeling that the work, instead of being finished, has really only begun.

It's lots of fun to hear Griffin, of the *Nationalist*, hold forth about the delights of a country life as compared with that of mortals condemned to the hot brick walls and dirty streets of a city. He has tried it a whole week, and is a convert to our theory already. It is now in order for Runyan, of the *Enterprise*, to come to the suburbs. It isn't healthy to live in a city all the year.

Speaking of which suggests the single but solemn question, where does the Editorial Association meet this year? When? How much of it?

Who said so? What will it do? Where will it go when it gets through doing it? How long will it be gone? Will it take its lunch along this time, and if so how much? Will Ewing's basket be there? Full? Will the weather be hot? How hot? How do you know? Will the train be on time, or on the rails? What sort of rails? We think of emigrating to your State, and would like any information you can give. Being out of stamps we don't enclose any for postage, clerk hire, or printing. Are the Indians—?

The following students stood in the first rank during the past month, having graded between 95 and 100 in all their studies:

Atchison—George Storch; *Barton*—Crume Pegan; *Cherokee*—Alice Allen, Hattie Allen; *Clay*—Jasper Cowell, John Raider, Etta Wylie, John Wylie, Oliver Wylie; *Cloud*—Kate Bean; *Dickinson*—Wm. Day, Bion Smith, Amos Wilson, Nena Wilson; *Ellsworth*—Frank Sternberg; *Franklin*—Flora Beckwith, Mollie Marcell; *Greenwood*—Stella Bouton, Albert Godfrey; *Jewell*—Thomas Wyland; *Johnson*—Albert Dickson, James Dickson, Thomas Moore; *Lyon*—Mark Reeve, Clement Smith; *Marshall*—Pierce Hickey; *McPherson*—Bernhard Anderson, Charles Lundberg; *Missouri*—Henry Coe, Jennie Cee; *Mitchell*—Tully Scott; *Montgomery*—Lewis Salter; *New York*—Henry Thorne; *Osborne*—William Eckman; *Ottawa*—Silas Mason; *Pottawatomie*, —Julia Finney, Corwin Reed, William Sikes; *Rice*—John Mann; *Riley*—Arthur Blain, Mina Hosmer, Ellen Fletcher, Wm. J. Jeffrey, Emma Knostman, Emma Parish, Grace Parker, George Platt, Augustus Platt, Grace Strong, Cora Ulrich, Ella Vincent, John Winne, Clarence Wood; *Sedgwick*—Emma Cook; *Shawnee*—Lewis W. Call, Dora Kinsey; *Wa-baunsee*—Albert Stiles; *Wilson*—Noble Richardson.

ENTERPRISE ITEMS.

Capt. W. J. Hunter and family have removed to Hays City.

Jas. Ritchie, who has been on a visit to Cincinnati, says his sister, who came here for her health some time ago, is feeling and looking considerably better.

The report having been circulated east and south of Riley county that the bridges across the Blue and Kansas rivers at this place are toll bridges, we desire to say that it is an error. These bridges are not, never have been, and by the proposition upon which the bonds were voted, never can be toll bridges.

The Keystone Company, from Cumberland county, Pa., passed west on the express last Friday, en route for Russell county. They are in charge of W. D. Blackburn, general agent of the National Immigration Bureau, of Philadelphia. Come on, Kansas has room for the balance of Pennsylvania, and a few smaller States thrown in.

The Governor has appointed Lewis Best, of Beloit, and Dr. Challiss, of Atchison, Regents of the Agricultural College, to succeed Messrs. Adams and Lawrence, whose terms have expired. Dr. Challiss is spoken of by the *Champion* as one whose sound sense and business qualifications will be of great value to the Board. The appointment of Capt. Best is one of the best that could have been made from the northwest. He is an old soldier, and has been county clerk of Mitchell county for several years.

NATIONALIST ITEMS.

Several cars of stock were shipped last Thursday. Rev. Mr. Gale preached at the Baptist church on last Sunday.

A nephew of Prof. Ward made a flying visit to this place last week, while on his way West.

Our horticulturists are happy over the prospects of a fine fruit crop this year. The outlook is now good.

Prof. Kedzie and family, and Mrs. Prof. Shelton and son, expect to spend the long vacation at their old homes in Michigan, the coming summer.

On Tuesday horticulturists quaked in their boots, but the wind that had died down during the afternoon, rose again during the night, and consequently there was no frost.

It is stated that 4,000 persons left Kansas City in one day last week, for the purpose of finding homes in Kansas. The trains west on the K. P. are very long and very much crowded.

Jesse White says from what he sees while traveling about Riley county this spring, he judges that ten times as much spring wheat is being sown as usual, and everybody says that fall wheat never looked better.

In Prussia it is said the potato is cultivated with peculiar success. As the stalk grows, the earth is heaped up, leaving only three leaves at the top; roots are thus greatly increased, while the produce is said to be astonishing.

A gentleman from Massachusetts told us, a short time ago, that the Adams House was the best hotel in which he had tarried west of St. Louis, and he had been to nearly all the principal towns and best hotels. So much for our new proprietor, Mr. Donaldson.

The Manhattan INDUSTRIALIST has a new head, representing the Agricultural College grounds and buildings. It is very neat and appropriate.—*Laredo Press*.

The INDUSTRIALIST, published at Manhattan, is a tip-top little paper. Every time we look at its familiar face we wish it was larger, they are forced to condense too much.—*Scandia Republic*.

Dr. Wm. L. Challiss, of this city, was yesterday appointed by Gov. Anthony as a member of the Board of Regents of the State Agricultural College. The Doctor's thorough business qualifications and energy will be of great value in the work of the Board. He is heartily in sympathy with the purpose of the Governor to make the College an industrial school, where students can receive a practical education.—*Champion*.

The following gentlemen have been appointed Regents of the Agricultural College: Dr. W. L. Challiss, of Atchison, and Mr. L. J. Best, of Beloit. We presume, when the supply of professional and business men is exhausted, there will be some farmers appointed as Regents.—*Kansas Farmer*.

Dr. Challiss is one of the largest farmers and stock raisers in Kansas. He has done more farming than the editor of the *Kansas Farmer* ever did, and could learn Mr. Hudson more about the practical work of farming than he ever knew in his life. He has two of the largest, finest and best-managed farms in the State of Kansas, one near this city and the other in Nemaha county, and he has probably the largest flock of sheep in the State.—*Champion*.

Gov. Anthony yesterday appointed Dr. W. L. Challiss, of Atchison, and L. J. Best, of Beloit, Mitchell county, Regents of the Kansas State Agricultural College, in the place of two whose terms had expired. Mr. Challiss is a physician, but we believe not in practice. He owns two large farms, and is an extensive stock grower and farmer. Being one of the best business men in the State, as well as a man of education and varied information on all subjects, his appointment must be conceded to be a good one. Mr. Best has for some time been clerk of Mitchell county, and has the reputation of being an excellent one and of good business habits. We are not so well acquainted with him as with Dr. Challiss, but those who know him best say that he will make a valuable working member of the Board of Regents.—*Commonwealth*.

DIRECTIONS TO APPLICANTS.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; and English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and three literary recitations as much as the average student can perfectly perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M. on academic days, and divine service once every Sabbath.

EXPENSES.

There are no charges whatever for enrollment, attendance or instruction in the regular courses; nor are there any "contingent fees" for the repair of buildings, for the use of books or apparatus, for diplomas, or the kindred privileges usually grouped under the term "contingent." Male students are furnished instruction, the use of apparatus, instruments or tools, in both the literary and industrial classes marked out for them, without any charge. And the same is true of female students in the regular classes provided for them. Printing and Telegraphy are industrials primarily provided for the education of female students, and male students taking either of these are charged \$1 per month for use of instruments.

Instrumental music is a fine art or "accomplishment" rather than a mechanical art. We do not place it among our "industrials" in the same sense, or for the same purpose, that we do those provided for teaching the trades. Accordingly, a fee of \$12 per term, or seventy-five cents per week is required from female students for tuition and the use of pianos or organs.

The only charge made for material in either the literary or industrial departments is for the chemicals used by students in laboratory practice, which are furnished at wholesale prices, and amount to but a small sum.

Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$2.75 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2 to \$5 per term.

No student need expend over \$5 per week; and many of our best pupils are living at \$1.25 per week. Students desiring to "board themselves" can do so at from \$1 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

Educational Labor.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

Remunerated Labor.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and

which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employee instead of a scholar. It pays for work, he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College furnishes only such employment as its own interests require, and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to predict how much a given person can earn, since that depends upon what he can do and what work there is to be done. Hence, it is wholly impossible for us to answer the question so often asked: "Do you think I can meet my expenses by work?" Some students make one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses on the Farm or in the Nursery. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision. We can teach all who come, but cannot absolutely promise anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during each of the last three years we have had more to do than the students could perform, we are inclined to give greater and positive encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course. And certainly this places an education within the reach of every determined boy. As yet we are unable to offer similar advantages to girls, not requiring labor in the College departments which they can perform.

TO NEW STUDENTS.

Bring the text-books you have been using. On arrival, first arrange for your boarding. A. A. Stewart, Sup't Printing Department, will furnish information, either by letter or on application, concerning boarding places or rooms for rent. Report to the President at 8:30 A. M., immediately after chapel, for enrollment.

For further information apply to Jno. A. Anderson, President, Manhattan, Kansas.

MARRIED.

ABELL—HOOPER—April 6th, by Prof. E. Gale, at his residence in Manhattan, REV. ROBERT ABELL, of Bala, Kansas, to MRS. L. E. HOOPER, of Kent Co., Michigan.

RAILROAD TIME-TABLE.

KANSAS PACIFIC RAILWAY.

PASSENGER ARRIVES.

Going East..... 10:50 A. M.
Going West..... 5:45 P. M.

FREIGHT ARRIVES.

Going East..... 5:45 P. M., and 9:45 P. M.
Going West..... 6:20 A. M. and 10:50 A. M.

Passengers with tickets are carried on any of the above-named trains.

GEO. C. WILDER, Agent.

METEOROLOGICAL RECORD.

Condensed by Prof. Kedzie from the observations taken at the State Agricultural College, for the week ending April 11th, 1878. Latitude, 39°12'; Longitude, 96°40'; Height, 1,200 feet.

DAY OF WEEK AND MONTH.	Temperature.			Bar.
	Max.	Min.	Mean.	
Friday.....	565°	35°	55°	28.51
Saturday.....	664°	35	53.25	28.52
S				

THE INDUSTRIALIST.

SATURDAY, APRIL 13, 1878.

KANSAS STATE AGRICULTURAL COLLEGE.

Board of Regents.

B. L. KINGSBURY, Burlington, Coffey Co.
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M. L. WARD, Prof. Mathematics and English.
WM. K. KEDZIE, Prof. Chemistry and Physics.
E. M. SHELTON, Prof. Prac. Agricul., Sup't Farm.
E. GALE, Prof. Botany and Horticulture.
J. E. PLATT, Prof. Elec'm English, Mathematics.
JNO. D. WALTERS, Teacher Industrial Drawing.
HON. D. J. BREWER, Lecturer on Practical Law.
A. TODD, Sup't Mechanical Department.
A. A. STEWART, Sup't Printing Department.
W. C. STEWART, Sup't Telegraph Department.
MRS. M. E. CRIPPS, Sup't Sewing Department.
MISS CARRIE STEELE, Teacher Instrumental Music.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PRACTICAL AGRICULTURE.

Second Year:—General principles of breeding; history and characteristics of breeds; adaptation of different breeds for special purposes and localities; implements of simple tillage; mechanical principles involved in their construction; action of the plow upon soil and subsoil; principles of draught; influence of different adjustments upon draught; use of the dynamometer; value of hoed crops in a system of husbandry; the cultivation of corn and roots; soils that need drainage to lay out a system of drains; house drainage; sewerage.

Fourth Year: General view of agriculture, an ancient and modern; agricultural progress of the last century; relative advantages of mixed husbandry and special farming; the selection and arrangement of the farm with reference to the system to be pursued; rotation of crops; general advantages of a rotation; the best rotation with reference to disposition of labor, production of manure, and extermination of weeds; pasturage and production of grain and forage crops; manures, how best housed and applied; composting manures; commercial fertilizers; systems of feeding; stall feeding; steaming food; soiling; experiments in feeding; farm buildings; farm-houses; barns.

FARM ECONOMY.

Woman's Course, Fourth Year: Dairy products as human food; influences affecting character of milk; manufacture of condensed milk; the factory system and household plan of cheese-making; treatment of rennet; general process of cheese manufacture; subsequent treatment of cheese; butter-making; creameries; "deep" and "shallow" setting systems; general process of butter-making; packing and preserving butter.

DEPARTMENT OF BOTANY AND PRACTICAL HORTICULTURE.

This department embraces a course of instruction in the elements of botany, structural and systematic, with a constant attention to the practical application of botany to the farm, orchard, garden, nursery and forest; also a course of lectures on Landscape Gardening. The instruction is mainly given by lectures, accompanied by regular practical drill in all the work of the fruit, vegetable and flower gardens, nursery, orchard, vineyard and ornamental grounds.

The lectures in Practical Horticulture embrace the following and kindred subjects: The relation of atmospheric motion, moisture and temperature to horticulture; seeds, the means of collecting and preserving propagation, by seeds, cuttings, layers, suckers, grafting, budding; care of young plants; improvement of varieties; management of commercial and farm nursery; modes of pruning; the orchard; fruit suitable for orchard and garden culture; the flower, vegetable and fruit garden; importance and mode of forest culture; shelter belts and their influence; weeds and useful plants; noting the species of trees worthy of culture, either for profit or ornament.

LANDSCAPE GARDENING.

The lectures on Landscape Gardening not only unfold the accepted principles of the art, but at the same time give special attention to such applications of the art as may be made universally available in laying out and improvement of farms and the homes of the people. These lectures are accompanied by a practical drill in the work of laying out and plotting grounds topographically.

CHEMICAL DEPARTMENT.

PHYSICS.

This includes a full consideration of the laws of mechanics, of liquids, gases and vapors, weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life. Text-book, Ganot.

INORGANIC CHEMISTRY.

This course is opened with a careful study of chemical forces and the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially with regard to their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.

This comprises a thorough study of the chemistry of organic compounds, the composition

of plants and of the various compounds derived from them. Constantly accompanied by laboratory practice.

CHEMICAL ANALYSIS.

In this course each student is furnished his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, mineral waters, commercial compounds, etc. After completing this course, he enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.

This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crops Feed."

METEOROLOGY.

Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken under direction of the Signal Service. Text-book, Loomis' Meteorology.

MINERALOGY.

This includes the study of the laws of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blowpipe analysis forms a very important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy.

HOUSEHOLD CHEMISTRY.

A course of lectures on this subject is yearly delivered to a class of young ladies. The course embraces the chemistry of cooking; the composition of food; bread; tea, chocolate and coffee; butter and milk; ripening and preservation of fruits, etc.

SPECIAL COURSES

Are constantly in progress in Assaying, Pharmaceutical Chemistry and Photography.

ENGLISH LANGUAGE.

Words are simply tools used to express ideas; and, since the vast majority of our communications are made by the employment of spoken or written words, skill in using them is as profitable to the industrialist as dexterity with the needle is profitable to the seamstress. The direct aim of the course is to make the student skillful and intelligent in handling the machinery called language, just as an engineer handles a locomotive; and no drill will be omitted, or effort spared, to gain this end. Apart from the course itself, which is far more practical and complete than that usually found in literary colleges, the constant attention given this subject by all the departments, and especially the practice required in the printing classes, affords superior advantages to the student.

DRILL IN ENGLISH.

"As grammar was made after language, so ought it to be taught after language."—Herbert Spencer.

Drill in English embraces the following topics:

Sounds of the language; drill in producing the vocal, sub-vocal and aspirate elements with accuracy, distinctness and volume; vowels, consonants.

Letters: Form; power; rules for spelling, drill.

Words: Signification, properties, modifications, variations, relation and dependence.

Sentences: Drill in statement of ideas; description, clearness, terseness, vigor; business letters, discussion; capitalization; syllabification; punctuation; construction and analysis of sentences; elements, uses and names; criticism of compositions printed as written; proof reading; grammatical construction; superfluous words and clauses; drill in reading, speaking and penmanship.

Text-books: Webster's Academic Dictionary; Lee & Hadley's Advanced Lessons in Language.

Pupils deficient in spelling, etc., should enter the printing class, the printing-office being the work-shop of language.

STRUCTURE OF ENGLISH.

ELEMENTS OF WORDS.—The end aimed at in this study is to learn everything about words which will aid in their effective use. Among the topics included are:

Roots: What are they; their origin; their force and value as an element of language; the manner of their growth into different parts of speech.

Stems: Their derivation; their offices and properties; their relation to the other parts of words.

Prefixes and Suffixes: The several sources whence derived; the relation of their force or significance to those sources; explanation of the laws and principles governing their use along with stems.

Compounds: Their value; their properties and uses; the laws governing their formation.

Synonyms: Definitions; causes of their abundance in English; the principles to be observed in choosing among them, to express a thought.

Criticism: This constitutes a prominent part of the exercises of the pupil through his whole course in the study of English. It not only diversifies and enlivens the class-room exercises, but reduces to practice the principles of the structure of the language. By this means, the student acquires not only a knowledge of English, but readiness, skill and accuracy in speaking or writing it. The exercises in criticism embrace not only examination of selected matter, but original composition.

ELEMENTS OF SENTENCES.—The purpose in view in studying this subject is not to traverse the ground gone over in the study of grammar, but to fix in the mind of the student a clear understanding and remembrance of names, the properties and offices of the several classes of words entering into an English sentence, by showing him the reason of things; to make more simple, as well as interesting and practically useful, a study otherwise "dry and unprofitable" in many cases, by explaining the reason of the verbal forms and changes, the rules and maxims he is to remember and observe in his use of language. In the same manner he is conducted through a study of the mutual relations and dependencies of the several elements making up a sentence.

MATHEMATICAL DEPARTMENT.

Figures and lines, like words, are only instruments with which to convey ideas, or perform

operations that cannot be easily done without them. The arithmetical principles used in business are few and simple; but accuracy and rapidity in computation are only gained by practice. College graduates often fail to retain clerkships, not because they do not know *why* given operations are performed, but because they can neither add, multiply or divide with that habitual correctness which renders their work reliable.

DRILL IN ARITHMETIC.

The chief design of this study is to make the student expert in the use of numbers, as employed by the industrialist for profit. The occupation of a successful farmer demands the application of every principle of practical arithmetic, and is taken as a starting point, rather than that of an abstract system. Beginning with simple cash account, book-keeping is gradually developed to the full extent of its real utility. The areas of fields, expense of crops, construction of houses, sales of produce, and investment of capital, involve all the fundamental operations, and those of profit and loss, commission, taxes, insurance, exchange and stocks. Following this line, the student, so far from hammering away at "pure" science draws from the mathematical store-house what he needs, and sees why he needs it. Accuracy of calculation and posting, rather than a *mere* comprehension of the principles, is aimed at. Besides the recitation-room drill in business forms, practice in the field is also given. Estimating the number of cords in a pile of wood said to be 100x4x4 feet is one thing; measuring a pile of wood through which any number of cuts may be harmlessly thrown, and in which four-foot sticks are the exception, is quite another and more difficult thing.

ARITHMETIC AND BOOK-KEEPING.

Is a continuation of the above, having the same purpose and adopting such methods as the necessities of the class indicate. Thorough instruction in the principles and forms of business law is given. It will be seen that this method of teaching book-keeping, besides ensuring arithmetical practice, develops practical skill in that important art.

ALGEBRA.

Algebra is included in the course as a preparation for the study of Surveying.

DRAWING.

The practical value of Industrial Drawing can hardly be overestimated, first, because its study is the best drill for the development of the perceptive faculties, which are the ones most employed in daily life; and, second, because the working classes make a far greater use of lines than they do of figures. A farmer follows a line when laying a straight furrow; the carpenter uses the square and rule twenty times as often as he does figures; and a woman in cutting a pattern, or deciding that one bonnet is prettier than another, does so by the line or "form." So that either in its direct application, or in the exercise of that taste which comes from skill in using lines, this branch of mathematics is quite as important as a means of "mental discipline" as is the branch of computation, and is of far greater daily use. The admirable system of Prof. Walter Smith, Art Director of Massachusetts, is thoroughly followed through the grades of Free-hand, Geometrical, Object, Model, Perspective, Mechanical and Topographical Drawing, during the terms indicated by the Course of Study. In addition, constant practice in the application of lines to metal and wood is furnished in the Blacksmith, Carpenter, Turning, Scroll-sawing, Carving, Engraving and Printing shops, and to fabrics in the Sewing Department.

PRACTICAL GEOMETRY.

Not one farmer in a thousand ever uses the transit in surveying his land, the testimony of the county surveyor being decisive in court; but every farmer makes countless applications of lines and angles in laying off fields, roads, gardens, planning houses, determining levels, etc. The object of Practical Geometry is to teach the properties and uses of angles, and to make the student skillful in the application of lines to the field by the use of such simple instruments as are always within reach, or within his ability to construct; and accurate in the transferring of plans to the grounds, board or block.

PRACTICAL SURVEYING.

The drill in the use of figures and lines given by the mathematical course as above indicated renders the mastery of surveying an easy task. There is no calculation made or formula used by the working engineer which cannot be readily understood and performed by a skillful mathematician after proper instruction. The hand-book of the engineer is accordingly supplemented with such special guidance as is found necessary for a full comprehension of the mathematical principles and their applications; and extended field practice is required in the use of the compass, level, transit and theodolite.

STUDIES SPECIAL TO WOMAN.

Besides the studies already indicated, attention is called to the following:

SPECIAL HYGIENE.

As shown in the course, one term is devoted to the study of Physiology, from the text-book of Dr. J. C. Dalton. This is followed in the fourth year by a course of lectures to young ladies by Mrs. Cripps on the subject of Hygiene, embracing such applications of physiological truths and such instruction in hygienic matters as are valuable to women.

FARM ECONOMY considers those affairs of the farm which usually come under the supervision of the farmer's wife or daughter, and which are not included in "gardening" or "household economy," such as butter and cheese-making, dairy management, etc. A course of lectures is delivered by the Professor of Practical Agriculture. See heading, "Farm Economy."

GARDENING is included in Practical Horticulture. See heading, "Landscape Gardening."

HOUSEHOLD CHEMISTRY. See heading, "Household Chemistry."

HOUSEHOLD ECONOMY

Follows Household Chemistry and consists of lectures by Mrs. Cripps in the art of house-keeping, embracing cookery, domestic management, and kindred topics. Many elderly gentlemen sufficiently know, and more young gentlemen will duly discover, that systematic knowledge of how cooking ought to be done is luminously different from the ability to do it. Instruction without practice can effect but little. Accordingly, a kitchen

laboratory has been completely furnished, and affords every facility for drill in the art of cooking. This drill chiefly differs from that of a kitchen in the respect that after a girl has learned to wash dishes or pare potatoes she is not kept everlasting at either. After full trial we have found it just as feasible to give this practice, with profit and pleasure to the pupil, as it is to give laboratory practice in chemistry—and no more expensive.

GENERAL INFORMATION.

BUILDINGS.

Old College Building.—Stone, three stories, 40x60, nine rooms, used for library, cabinet, and dormitories. One mile distant from following:

College Building.—Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the Literary Departments.

Laboratory.—Cross form, 109x109, one story, stone, containing a lecture room, office, balance room and four large laboratories.

Horticultural Building.—Stone, one story and basement, 31x80, five rooms for recitations, workshop, etc.

Mechanical Building.—Stone, 38x102, two stories, seven rooms, containing Wood Shops, Printing, Telegraph, Sewing and Instrumental Music Departments.

Barn.—Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc.

Blacksmith Shop.—Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.

A Farm of 185 acres, thoroughly equipped and cultivated. Shorthorn, Devon, Jersey and Galloway cattle; Berkshire and Essex swine; etc., etc.

A Nursery of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyards, small fruits, etc.

The Chemical Department, with its new Laboratory and appliances, is practically equal to any in the United States.

The Mechanical Department has twenty-five kits of carpenter's tools; lathes, scroll-saws, etc.; and a well-furnished blacksmith shop.

The Sewing Department is well equipped with machines and appliances.

The Mathematical Department is supplied with the appliances necessary for study and practice in surveying.

The Printing Department has twenty-six pairs of cases; presses, etc.

The Telegraph Department has four miles of line,